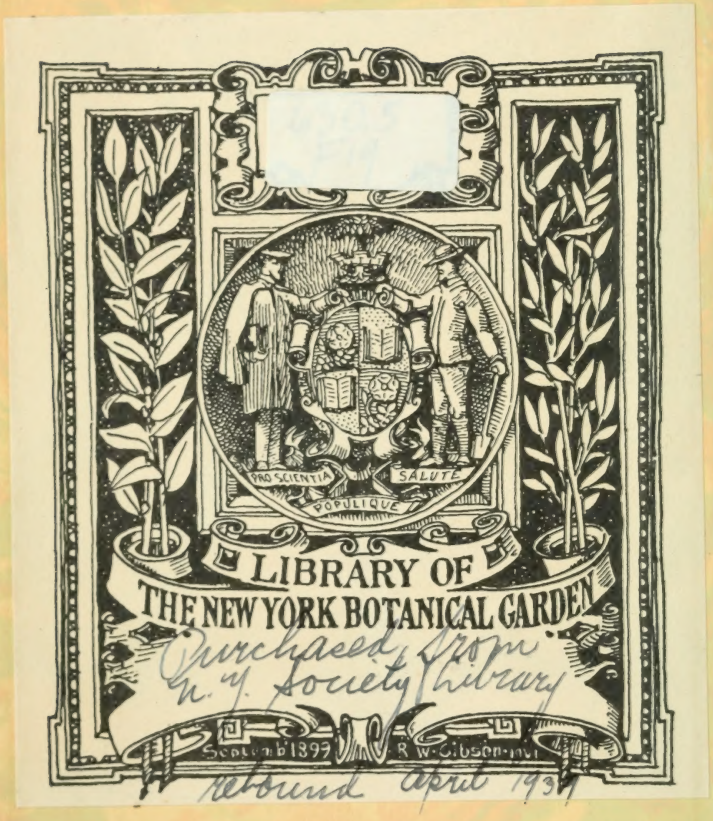
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# THE FARMER'S MAGAZINE:

A

PERIODICAL WORK,

EXCLUSIVELY DEVOTED TO

*AGRICULTURE,*

AND

RURAL AFFAIRS:

1803.

*Ye gen'rous Britons, venerate the PLOUGH,*
*And o'er your hills, and long withdrawing vales,*
*Let Autumn spread her treasures to the Sun.* THOMSON.

VOL. IV.

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THE

# FARMER'S MAGAZINE:

WEDNESDAY, 2. FEBRUARY, 1803.

N°. XIII.

## BRANCH I.

### ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Culture of Potatoes and the Cauſe of Curl.*

Nihil humani a me alienum puto.

SIR,

I have been a regular and conſtant reader of your Magazine from its commencement; and I eſteem it ſo highly, and think its tendency ſo beneficial, that I conſider it as the duty of every wellwiſher to the proſperity of the country to give it all the ſupport and encouragement they can. You will give me leave to ſay, that I look upon its excellence as conſiſting, not ſo much in the information which it exhibits upon ſubjects of agriculture (though that is certainly conſiderable) as in its general tendency to excite and encourage a ſpirit of inquiry, of emulation and enterpriſe, and to elicit and combine every ſpark of genius, and every obſervation of experience, from the maſs of the community; that the mind may be thereby roufed to reflection and attentive obſervation, from which only we may fondly hope will reſult a ſyſtem of agriculture founded on the ſolid baſis of judgment and experience.

You ſome where juſtly obſerve, that agriculture is the moſt extenſive of all manufactures, and the moſt important of all ſciences. It is from this ſource alone that the King to the meaneſt beggar are ſupported in exiſtence. When it flouriſhes and proſpers, the moſt heartfelt joy is diffuſed through all ranks; and our late experience has convinced every one what gloom and confuſion ariſes whenever it fails.

But this noble, this princely ſcience is only yet in its infancy. Much, no doubt, hath been done within theſe thirty years, but much yet remains to be done before the happy plains of Britain attain to that verdure and cultivation of which they are capable. If you act from the generous principle contained in the motto prefixed to this paper, which I am convinced you do, you will think even a trifle not below your notice, if it contributes any thing to the general good. I ſend you (literally) a trifle. If you think it is of any conſequence, you are at liberty to publiſh it; if not, you may conſign it to the flames, or do with it what you pleaſe.

I find that, almoſt in every Number of your Magazine, the ſubject of potatoes occupies the attention of many of your correſpondents. And there is not certainly any one part of agriculture more entitled to attention than this. People, like me, who are advanced in life, and who can remember the time when even the principal farmers did not plant more than a few pecks, muſt have obſerved, that the great plenty now enjoyed, eſpecially by the lower orders of ſociety, is more to be aſcribed to the extenſive and ſucceſsful cultivation of this eſculent than to any other cauſe. In a national point of view, therefore, it is of the higheſt importance; and ſo far as it extends, I am perſuaded that few crops will more compleatly recompence the labours of the huſbandman. The quantity of food that may be produced for the ſubſiſtence of mankind, and the money that may come into the farmer's pocket from an acre of well-cultivated potatoes will, I believe, be allowed to equal, if not very much to exceed, that of any other crop. I have frequently had forty bolls of good potatoes, at eight Wincheſter buſhels to the boll, from an acre. The mode of culture is now pretty generally known. Drilling and horſe-hoeing, when the ground is ſufficiently dry to admit of it, is, I preſume, generally practiſed. But the application of this uſeful vegetable, to all the purpoſes to which it is adapted, is not yet ſo univerſally attended to as it deſerves.

It is comparatively but of late years that potatoes have been uſed, in a raw ſtate, for the feeding and rearing of horſes and cattle, and they are not yet carried to the extent that they might be, otherwiſe we ſhould not have heard any complaints of the want of conſumpt of laſt year's abundant crop. It ought to be known, that

that cattle may be fed off for the butcher with potatoes nearly as ſoon and as well as with turnip. I know ſeveral farmers who did ſo laſt ſpring; and I myſelf have practiſed it frequently. There is one precaution, however, that is abſolutely requiſite to prevent ſuffocation, which is, to take care that the cattles heads ſhall never riſe above the level of their body; and this can be eaſily done, by fixing them with a chain to the crib inſtead of the common way. If this method were more generally adopted, many of the ſmall farmers, who cannot have extenſive turnip fields, would be able to keep their live ſtock in good order through the winter, or feed off a beaſt or two in the ſpring, by which means the loud and well founded complaints of the exorbitant price of butcher meat would ſooner ceaſe.

But what I would chiefly obſerve reſpecting the value of potatoes, is, that ſince the introduction of the turnip huſbandry into this country, and which has ſo eſſentially contributed to its improvement, the general ſolicitude has been for a proper ſubſtitute when the turnip are exhauſted, either to finiſh off what are intended for ſlaughter, or to carry on others in good condition till the ſpring graſs comes forward. I know that ruta baga is the ſuccedaneum preſcribed in either of theſe caſes. But when that is not to be had, or in a plentiful ſeaſon of potatoes, ſuch as the laſt, when they cannot be diſpoſed of for the food of man, they become an admirable ſubſtitute for turnip. I am acquainted with one farmer who fed with potatoes without any turnip; and two others who had recourſe to them when the turnip ſeaſon was over, one of whom conſumed to the extent of 100 bolls. The cattle were a little ſhy at firſt to take the potatoes after having been uſed to turnip; but hunger ſoon brought them to, and they throve equally upon the one as the other. It is well known, that horſes and young cattle thrive remarkably upon them, when given in moderation, and in a raw ſtate; and they increaſe the milk of cows very conſiderably. Let them, then, be largely and extenſively cultivated as the food of man and beaſt; as the means of averting ſcarcity; as a good ſubſtitute for turnip; and though not entirely equal to that crop for cleaning the ground, yet a good means of doing ſo where turnip cannot be had.

It has been objected, that potatoes are a more ſcourging crop than turnip. To a certain degree they are ſo: But a ſmall quantity of manure applied to the ſucceeding crop will remedy that defect; and the great difference of value betwixt a good crop of potatoes and one of turnips, may well bear that additional expence; not to ſpeak of their value as a ſubſtitute when the ſeaſon of turnip is over, which to the farmer is moſt invaluable.

Much ſpeculation has been held in your Magazine about the diſeaſe

diſeaſe called the Curl, to which this plant is liable. One gentleman, who ſigns himſelf P. H. gives us a moſt amuſing theory upon it in your eleventh Number. A theory which (however ingenious) will be readily acknowledged to be contrary to the general analogy of nature, and the experience of mankind in every other caſe. It is the general rule of nature, extending to the whole of animal and vegetable exiſtence, that the more perfect any one of either is, the more perfect will its produce be; and of courſe we would be led, *a priori*, to conclude, that the longer and more completely any foreign plant or vegetable is naturalized to a climate, the more healthy will it become, and the more readily will it endure the inclemencies to which the climate is ſubject, in ſo much as in time not to be diſtinguiſhed from that which is indigenous. And this, in fact, is as much the caſe with potatoes as with any other plant or vegetable whatever. For theſe kinds of potatoes which have been longeſt in the country, and in moſt general uſe, are found to be by far the beſt, the moſt wholeſome and palatable, and are ſooneſt ripe; while moſt of the new kinds are for ſeveral years ſlow and backward in their growth, ſeldom come to perfection, are generally of a looſe, ſpungy, and watery texture, and both unwholeſome and unpleaſant.

My opinion therefore reſpecting the cauſe of the curl in potatoes is different from any that I have yet ſeen publiſhed. I think it is more owing to ſeaſon than to any other cauſe. If the early part of the ſeaſon is ſo kindly and warm as to allow the plant to ſpring fairly up, and to take hold of the ground, there will be little or no curl. But if the potatoes are too early planted, or if the ſeaſon is cold and backward as this laſt ſpring hath been, we may expect curl in abundance. And ſo far as my obſervation reaches, this is uniformly the caſe. A late, cold, and froſty ſpring, and early planted potatoes, produce the curl; while later planted potatoes, or thoſe which are exempted from the froſt and cold at their firſt outſet, are more exempted from that diſeaſe. Potatoes that are planted on elevated and hilly or moiſt ſituations, and which cannot from neceſſity be ſo early planted as in warmer and more favourable ſituations, and which of courſe are later in ſpringing up, ſeldom before the end of May; among theſe the curl is ſcarce ever known, and are therefore had recourſe to as a change of ſeed, in thoſe places where the curl has prevailed.—Whether this ſyſtem is well-founded or not, it at leaſt has the merit of novelty, and, which is much better, it ſeems to be perfectly conſonant to the general analogy of nature, and therefore meriting ſome degree of attention. The child that has the misfortune to be nipped in its early infancy, either by improper confinement, or by the cold and harſh treatment of an unnatural and cruel mother or nurſe, becomes ſickly and dwarfiſh, and ten to one

one is decrepid for life; while an oppoſite treatment, produces a healthy child, blooming as the roſe, chearful and lively as the friſking lamb, ſmiling and happy as the lily of the valley.

If this is the cauſe of curl in potatoes, which I am convinced it is, the remedy is obvious, "Let them never be planted too early." The laſt week of April or the firſt of May is ſoon enough in any ſeaſon, and too ſoon if the ſeaſon happens to be froſty and cold. By this means they will eſcape the chilling morning and evening froſts They will be able to expand their tender foliage to receive the benign influence of the ſun, and the dew of heaven, and they will thrive apace, and cauſe the heart of man to ſing for joy at the bounty of the Great Creator. If, notwithſtanding, there ſhould ſometimes appear a few injured plants, mark them with a ſtick, or any thing elſe, till it be ſeen whether or not the encreaſing heat and moiſture will recover them; and if they ſtill ſeem to continue dwarfiſh, dig them up and caſt them away, as incumberers of the ground. They are unwholeſome food, and would infallibly pollute the ſucceeding crop.

As my name can add nothing to your celebrity, I muſt content myſelf with aſſuming a fictitious one; and ſhall therefore beg leave to ſubſcribe myſelf, Sir, your very humble ſervant,

3. *Sept.* 1802. AGRICOLA.

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*Remarks on the above Letter. By the Conductor.*

We are much obliged to Agricola for the above paper; and reſpectfully ſolicit a continuance of his valuable correſpondence. Reſpecting the tendency of the Magazine, Agricola's ideas are much in uniſon with thoſe entertained by the Conductor. To rouſe the minds of agriculturiſts into action, to excite a ſpirit of enquiry in the country, and to forward every deſign calculated to promote its improvement, are more our objects than to diſſeminate inſtruction. We ſhall not, however, let ſlip any opportunity of conveying uſeful information, though we do not aſſume the privilege of giving it in a didactic manner.

In the preceeding Numbers of the work, a deal of information has been communicated concerning the culture of potatoes —a branch of rural oeconomy highly deſerving attention in many points of view; and various theories have been aſſigned, by our correſpondents, relative to the cauſe of that baneful diſorder, the curl, which ſince 1778 has dreadfully affected this valuable eſculent, in many quarters of Great Britain. However ingenious ſome of theſe theories may be, (and we believe that the praiſe of ingenuity is all that can be beſtowed) it is obvious, that we are completely in the dark reſpecting the real cauſe.

The

The diſorder ſeems to be one of theſe ſecrets of nature, which, like that of ſmut upon wheat, threatens to remain long undiſcovered. We know for a certainty how to prevent both diſorders, and are to blame when the preventions are neglected.

Though we entertain a high opinion of potatoes, as food for human beings, yet we are not clear that they can be raiſed with advantage for the ſupport of cattle, as ſtated by our correſpondent. This eſculent is aſſuredly a ſevere robber; and, from the degree of labour neceſſary, proves a troubleſome article, when extenſively raiſed. Another circumſtance, and that very material, is, that the planting ſeaſon interferes with the working of the barley land, while the digging them up occurs at a critical period of the year, when labour is ſingularly precious. Beſides, potatoes are a moſt unhandy commodity, and cannot bear a compariſon with turnips, in feeding farm ſtock. We are convinced that it is eaſier to raiſe thirty tons of turnips per acre than ten tons of potatoes: therefore, in the arrangement of crops, a decided preference ought to be given to turnips; though, no doubt, if any potatoes remain on hand at the end of ſpring, they cannot be more beneficially employed than by giving them to live ſtock. All that we mean to ſay is, that it is an unprofitable trade to grow potatoes intentionally for live ſtock; though certainly, when other food runs ſhort, or when a quantity remains unconſumed, it is good management to uſe them in that manner.

As a ſubſtitute for turnips at the latter end of ſpring, potatoes are of importance; ſtill we think ruta baga preferable, though we confeſs, that the latter root is ſhy of growing upon many ſoils. But if potatoes are to be uſed regularly for cattle, betwixt the turnip and graſs ſeaſon, a certain extra-quantity muſt be annually planted for that purpoſe; which leaves a market for the ſuperfluity that attends a weighty crop to be as great a deſideratum as ever. It was ſtated in one of our former Numbers, that potatoes muſt either be very ſcarce or very plentiful. Nearly the ſame breadth of ground has been annually planted with this root for ſeveral years paſt. If the ſeaſon is good, they have uſually turned out a drug to the grower: whereas, in late, cold, and wet ſeaſons, the crop is ſcanty, yielding often three-fourths leſs of weight than what is gained under more favourable circumſtances.

Without giving our opinion of the cauſe of curl, aſſigned by our correſpondent, we decidedly coincide with him in reprobating early planting, which, in all our experience, was never followed by a good crop. The time he condeſcends upon for planting potatoes is early enough; though it is not more than two years ſince the public were amuſed with a moſt ingenious and plauſible ſcheme for planting them ſo early as the month of February—a ſcheme inconſiderately adopted by a few well-meaning people, to their great loſs and diſadvantage. N.

*Thoughts*

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Thoughts on Conſtructive Reſtrictions, ſo far as they affect the Tenantry of Scotland.*

SIR,

A queſtion has lately been agitated in ſeveral counties of Scotland, whether conſtructive reſtrictions can be impoſed upon the tenantry, in conſequence of ambiguous and undefined clauſes being contained in their leaſes; and various attempts have been made by proprietors to regulate the mode of cropping in the laſt year of the tenant's poſſeſſion, even when the leaſe was altogether open in that reſpect. The pretence generally offered for ſuch interference is drawn from the general clauſe engroſſed in all leaſes, viz. the engagement to manage the land in a huſbandman like manner, or words to that import. Upon this ground, many tenants have had their proceedings interrupted by interdicts from the judge ordinary of the bounds, which are eaſily obtained: a vexatious and expenſive proceſs neceſſarily follows; and before matters can be judicially aſcertained, the ſeaſon for executing the intended work is over, and of courſe much loſs and ſkaith ſuſtained by the tenant.

I believe that hardly one of theſe proceſſes has been determined upon a fixed principle, and that *ſpecialities* have generally been laid hold of as the baſis upon which the deciſion is given. This ſeems to be a favourite rule with our Scottiſh courts of juſtice, but is attended with bad conſequence to the public. It prevents people from knowing what is really the law of the land, and hence "the glorious uncertainty of the law" is a ſtanding toaſt amongſt its practitioners.

It appears to me, that no obligation can juſtly be impoſed upon the occupier of a farm, unleſs that he has expreſsly conſented to the performance of it in the inſtrument or deed under which he poſſeſſes the farm; and that to impoſe one burden under the pretence of ſecuring the performance of another, is an arbitrary attempt to oppreſs the occupier. The leaſe given by the owner to the occupier may be conſidered as the law which the parties have made for themſelves, therefore no obligation is incumbent upon the tenant except thoſe enumerated within the four corners of that inſtrument.

So far the generality of people are agreed; but a line of diſtinction may perhaps now be drawn. It will be alleged, on the landlord's ſide, that no more is demanded than what is contained in the leaſe. The tenant is bound to labour and cultivate his farm according

according to the rules of good huſbandry. He is now departing from theſe rules. He is ſowing too great a quantity of wheat (the inſtance of miſlabour generally quoted) and we have a right to ſtop him. War therefore begins, and a waſte of money is the uſual concomitant.

This brings me to the point I have in view, viz. Whether the nature of a general clauſe will warrant ſuch an interference as I have mentioned. That it fruſtrates the tenant's operations every perſon will grant, becauſe the interdict is uſually ſerved at a critical period of the ſeaſon. If the tenant is guilty of bad huſbandry, I readily grant that he has contravened the clauſe in queſtion; but that, by merely ſowing a quantity of wheat he becomes guilty, I deny in the moſt expreſs terms.

Every leaſe that I have ſeen contains ſuch a general clauſe as that alluded to, though often worded very differently. In ſome, the tenant is taken bound "to manage the land in a huſbandman-like manner;" in others, "to cultivate the ground according to the rules of good huſbandry;" in others, "to labour the ground fairly, according to the uſe and cuſtom of the country, and to keep the ſame in regular breaks." It is obvious, that no preciſe meaning can be affixed to theſe preſtations. They may be compared to the paſſage in Engliſh criminal indictments, where the culprit is ſaid to be tempted by the Devil, or the common phraſe in our decreet-arbitrals, the omiſſion of which, our beſt lawyers declare, nullify ſuch deeds. At the beſt, the general clauſe can only be viewed as one of theſe obſolete articles retained by conveyancers, after the utility of them has ceaſed, or perhaps they are preſerved for the benefit of legal people. To the tenant ſuch clauſes have, in many inſtances, proved grievouſly oppreſſive. To the proprietor, they are of no importance; for if he wiſhes his land cropped in a particular manner, he has a much ſurer way of getting his wiſhes fulfilled, by ſpecifying in the leaſe the mode of cropping that is to be practiſed during the currency, or at the concluſion thereof.

If a tenant is taken bound to labour according to the rules of good huſbandry, a queſtion occurs which has not yet been ſolved. Whether is it the huſbandry practiſed at the time of making the agreement, or that practiſed at the time of challenge? If it is the huſbandry practiſed at the date of the leaſe, then every kind of improvement is effectually prohibited. If it is the huſbandry of an after period, then the tenant is to be judged by a law that was not enacted when he ſigned his leaſe. In this aukward predicament are the advocates for conſtructive reſtrictions often placed. The more rational mode of interpreting this clauſe has been, to view it as not applicable to the mode of cropping,

ping, but as containing an obligation on the tenant to keep his land clean and in good heart. In this way we believe it was anciently underſtood, and ſo might prove advantageous to the parties.

The clauſe, as applying to the preſervation of breaks, is ſtill more abſurd, though it is conſiſtent with our knowledge that it was lately founded upon in an action for miſlabour. It is well known, that fifty or ſixty years ago, almoſt the whole infield land of Scotland was divided into what was technically called mucked land breaks. Theſe breaks generally amounted to four in number on each farm; and, according to the old cuſtom of Scotland, one of them was ſown with wheat, the ſecond with barley, the third with oats, the fourth with peaſe, and the whole dung made upon the farm was laid upon one of theſe breaks, generally the one intended for peaſe, while what was called outfield was utterly neglected. Hence aroſe the obligation to keep the land in *regular breaks*, and any alteration was characteriſed as *croſs cropping*. Indeed, the aboliſhment of outfield and infield may juſtly be conſidered as the greateſt improvement that has been introduced into Scottiſh huſbandry; yet this improvement could not have been accompliſhed had the clauſe in queſtion been adhered to.

It may here be remarked, that the ſowing a greater quantity of wheat than cuſtomary in the penult year of the leaſe, before the introduction of ſummer fallow or the aboliſhment of outfield, neceſſarily was a contravention of the general clauſe; therefore ſuch a deviation from good huſbandry might, in conſiſtence with the ſtricteſt principles of juſtice, be prevented or puniſhed. The cuſtom of the country, as already ſaid, was then to ſow wheat on one break, viz. that which had carried peaſe in the preceding year. If the tenant exceeded his uſual quantity, it occaſioned croſs cropping, or, in other words, cauſed a departure from the ſyſtem univerſally eſtabliſhed at the time. The complete alteration which, in our agricultural ſyſtem, has taken place during the courſe of the laſt century, therefore renders the ancient conſuetudinary law altogether uſeleſs. By fallowing a great breadth of ground, or by an extenſive uſe of fallow crops, the ſowing of wheat may be carried on to a much greater height than was practicable under the old ſyſtem. To apply the uſages and cuſtoms of a period (perhaps right at the time) to the uſages and cuſtoms of a period wherein huſbandry is practiſed upon principles different in every reſpect, is a manifeſt abſurdity. I may here borrow the words judiciouſly ſtated in the ſecond number of laſt volume, as they are quite applicable to the queſtion under diſcuſſion. "The numerous diſputes in our law courts con-

cerning agricultural matters proceed entirely from the change that has taken place in the agricultural ſyſtem; a change that renders the ancient common law of the land as inapplicable to the preſent ſtate of huſbandry as the obſolete ſtatutes of King James VI. againſt *coſtly claithing*, are to the faſhions of the preſent age."

Again: To labour the ground fairly, aſſuredly means that the tenant ſhould plough the land ſufficiently; that he ſhould keep it clean; and that it ſhould be kept dry: for if this laſt operation is neglected, it can neither be ploughed ſufficiently, nor kept clean. It has often ſurpriſed me, that proprietors ſhould be ſo ſhort ſighted as to paſs over the groſſeſt deviations from the general clauſe, which were fairly included in it,—and yet immediately take alarm when a tenant, from a concurrence of favourable circumſtances, was enabled to make his farm produce a conſiderable quantity of wheat. The ground is without doubt more deteriorated by bearing a crop of thiſtles and couch graſs than by the ſtrongeſt crop of wheat that can be raiſed; yet, the former is patiently ſuffered to paſs with impunity, while, under the latter caſe, the tenant is often haraſſed with vexatious proſecutions, even though he has prepared the land in a ſufficient way for carrying a crop valuable to himſelf, and beneficial to the public.

From what cauſe does this ſtrange conduct proceed? I have a better opinion of many of the complainers than to ſuppoſe that ſuch proceſſes are wantonly inſtituted. I think I can account for it in a way which will not ſacrifice the qualities of the heart to thoſe of the head. Before the introduction of ſummer fallow, wheat was undoubtedly a ſcourging crop; for, owing to the ſeaſon in which it was ſown, and to the imperfect culture given by one plowing to land which had carried a crop of peas, it was almoſt impracticable to ſow land with wheat without materially injuring it. But what injured it? Not the crop of wheat, but the immenſe quantity of graſs and noxious weeds which accompanied it. Theſe being ſuffered to remain undiſturbed for a whole year, got ſuch a hold of the ground that the moſt active cultivation could not eradicate them completely when the enſuing barley crop was ſown. Now the caſe is totally altered. Since fallow and fallow crops were introduced, the land that has carried wheat is, in general, the cleaneſt that is to be found in every farm; conſequently, a crop of this grain is not more injurious than any other culmiferous crop under ſimilar circumſtances.

I have ſeen it maintained in legal proceedings, that wheat is a ſcourging crop, becauſe it remains long in the ground. Such an aſſertion is puerile in the extreme; for, if it was well founded

founded, graſs land would ſtill be more ſeverely ſcourged. But waving the argument, I would enquire, What exhauſtion does the ground ſuſtain during the winter months, from being occupied by wheat? This, I ſuppoſe, will be difficult to compute. The fact is, that wheat is no more a ſcourger than other culmiferous grains, if the ground is equally well cultivated. If it yields a greater weight of ſtraw, it gives likewiſe a greater return of dung; conſequently, the exhauſtion of one year is abundantly compenſated afterwards.

It is a great miſtake, to ſuppoſe that the wheat lands are in a more reduced condition than thoſe where this grain is ſeldom ſown. From long attention to the ſtate of cultivation in Scotland, I venture to maintain, that thoſe diſtricts, which grow the greateſt quantity of wheat, are uniformly beſt cultivated. This muſt always be the caſe, where the cultivation is ſuch as to render it conſiſtent with the farmer's intereſt to ſow this grain extenſively. Before this can be done to advantage, much preparation is neceſſary: a conſiderable quantity of ſummer fallow is conſtantly required, and graſſes and drill crops muſt form a large ſhare of the previous ſequences. Without attending to theſe particulars, a large ſowing of wheat cannot be ſucceſsfully accompliſhed: and it is to be preſumed, that the farmer who manages in that way has previouſly arranged matters accordingly. If he has not, I hold that he cannot ſerve himſelf by an extenſive ſowing of wheat, even in the concluding year of his leaſe.

I have conſidered the general clauſe chiefly, as if it applied only to the ſowing of wheat, becauſe it is from this ſource that nine out of ten of the proceſſes for miſlabour originate. I may allow the force of the general clauſe, and conſiſtently contend that ſowing one half of an arable farm with wheat is not contrary to the rules of good huſbandry. If wheat is ſown after fallow, or drilled beans, or turnips, or clover, the rotation may go round without the leaſt interruption. It is now an acknowledged principle in farming, that two white crops ſhould not ſucceſſively be ſown; but that, if a leguminous and culmiferous crop is taken alternately, it is a matter of no importance, ſo far as reſpects good farming, what variety the culmiferous crop is of,—ſituation, climate, and conveniency, being the only circumſtances that ſhould juſtify the election. It is plain, that under ſuch a ſyſtem, one half of a farm, where the ſoil is rich, may conſtantly be kept in wheat. That the ſyſtem is not generally purſued, on deep rich ſoils, muſt be attributed more to a conviction that it is rather in common caſes inconſiſtent with a regular diviſion of labour thro' the ſeaſon, than to ideas entertained of its inutility or impropriety.

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In a word, I am decidedly of opinion that the general clauſe, if it is applied to cropping, is of a miſchievous tendency to the farming intereſt of Scotland. I have witneſſed this in many inſtances, and been amazed to ſee it ſupported by reaſons directly contradictory. I remember well of being concerned in a remit from the ſuperior court, in company with two gentlemen of acknowledged abilities. The buſineſs hinged almoſt entirely upon the quantity of wheat ſown; for the farm under conſideration was in excellent order. One of my coadjutors maintained, that the tenant had contravened the leaſe, becauſe he had not followed out a regular rotation of fours or ſixes; and that, without adhering to ſome one or other of theſe rotations, no huſbandry could be good.—I don't care a halfpenny, ſays my other friend, what mode of cropping has been practiſed, providing one half of the farm is under green crops. The tenant may make wheat of the other half, if he pleaſes; but for all the acres in culmiferous crops above that half, I maintain that he is liable in damages. In this way are tenants often treated at the concluſion of a leaſe, which ſurely does not hold out much encouragement to the introduction of ſubſtantial improvements at an earlier ſtage; I mean, ſuch as are gained from draining, liming, and grazing the land,—ſeeing that occupiers may be deprived, in a legal manner, of reaping the full fruits of ſuch improvements.

If the general clauſe is confined to what appears to me to be its original and true object, viz. keeping the land clean and in as good heart as poſſible, then my oppoſition is at an end; but when it is applied to the mode of cropping, or to the kind of grain raiſed upon a farm, it opens a door for endleſs litigation.—The ſame rule can ſcarcely be eligible over all the farms of a ſingle pariſh, but muſt be utterly wide of juſtice when the practice of a country is meaſured by it. It ſubjects the management of practical and experienced farmers to the judgement of law courts, who cannot be ſuppoſed to poſſeſs the means of information. The farmers of Scotland will indeed deſerve pity if their management is to be ſubjected to ſuch a review. If the beſt method of cropping a farm is to be determined on the Bench, Sir William Pulteney may recall his donation for erecting a profeſſorſhip.

I have thus endeavoured to point out a few of the evils which may affect the tenantry of Scotland, if conſtructive reſtrictions are to be drawn from ambiguous or undefined covenants. The only method by which theſe evils can be avoided, is to get the general clauſe expunged altogether, or accompanied by a ſuitable explanation. As to proprietors, it would be a preferable plan were they to mark in a diſtinct manner the reſtrictions they mean ſhould be enforced at the concluſion of a leaſe. The tenant would then know

know the precise obligations which were to affect him or his heirs, and if he foolishly agreed to such as were improper, then he would have no person to blame but himself.

The inferences which I draw from what is said, are,

*First*, That constructive restrictions are a great loss to the tenantry of Scotland, exposing them to vexatious prosecutions, and occasioning much damage to individuals by the unavoidable consequences, without benefiting proprietors or the public.

*Secondly*, That the prestation of managing in a husbandman-like manner, or the general clause, however worded, ought not to be applied to the mode of cropping, or the kind of grain sown in the penult year of the lease, but merely to the order and condition in which the farm is kept or left by the occupier.

*Thirdly*, That the pretence usually assigned for a proprietor's interference, viz. sowing an excessive quantity of wheat, is altogether unfounded, providing the ground so sown is in good order; in other words, that it was fallowed or under a green crop in the preceding year.

*Fourthly*, That proprietors who wish to lay tenants under restrictions, at the conclusion of their leases, would act with more propriety were they to specify these restrictions when the agreement was entered into betwixt the parties.

I have now to request your excuse for taking up so much of your publication, but the importance of the subject will, I trust, justify me in your eyes. I am your's, &c.

ARATOR.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Improvement of Land considered by many people as Unimproveable.*

SIR,

A MISTAKEN idea seems to be entertained by many people, respecting the propriety of attempting to improve the upland districts of the country; and a distinction has been made betwixt lands considered to be improveable and those that are not, which, in my humble opinion, is not well founded. I know very little land but what may be improved considerably, if proper means are used; but that these means can be used by the majority of the tenantry, is a problematical point. The proprietors of such lands ought, therefore, to step forward at once, and execute what is necessary: or, if extensive improvements are not consonant

ſonant to their inclinations, they ought to put the lands into the hands of ſkilful tenants, whoſe capital ſtock is adequate to the undertaking required;—encouraging them by long leaſes and low rents. If a ſyſtem like this were generally adopted, I have hardly a doubt but that the moſt barren of our waſte lands would, in a ſhort time, be very much meliorated.

Allow me to put a hypothetical caſe, which will illuſtrate the buſineſs under conſideration. Suppoſe a farm in a high ſituated diſtrict, where the ſoil is cold and barren; the climate wet; the face of the country naked, and unprotected by fences or plantations; unprovided with roads, except ſome tracts marked out by the carts and horſes who have paſſed; at a great diſtance from lime, and other manures; and, from the want of ditches and drains, having all its beſt and low-lying fields inundated with water, during every ſpeat at the going away of a ſnow ſtorm.—Under theſe ſuppoſitions, (and they will upon enquiry be found in many caſes to be facts) can it be expected that any tenant of common ſenſe will make improvements, if he ſits on a ſhort leaſe, or is rack-rented? The portion of juſtice he owes to himſelf, to his family and to his friends, deters him from making outlays greater than will be repaid by common huſbandry: and a rack-rent effectually diſables him from ſtepping out of the beaten path, were he inclined to purſue a different courſe.

From theſe things, the neglect of improvements in the cold upland diſtricts need not excite any ſurpriſe. It is a neceſſary conſequence that follows the ſyſtem uſually adopted in ſuch ſituations, and can only be remedied by the introduction of more liberal plans. The proprietor who poſſeſſes land under ſuch circumſtances, muſt either be ſatisfied with the value it will yield in its *natural* ſtate,—or, if he wiſhes to reap the full benefit of his property, muſt cauſe improvements to be made, in the firſt inſtance, at his own expence, or ſet it to others upon terms that will enable them to perform what is neceſſary. A rack-rent and an improving leaſe cannot keep company together; and, if the one is to be got, the other muſt be ſacrificed.

If a good tenant is expected, the firſt thing required is to provide proper accommodations for him and his family, his ſervants and farm ſtock. Tenants will not now put up with ſuch accommodation as ſatisfied them in former times; and a good tenant knows how to eſtimate his value, eſpecially in a country where improvements are the object. Good roads, ſo as the tenant may have comfortable acceſs to the premiſſes, and through the ſeveral fields thereof, will alſo be conſidered as a deſirable benefit. The farm ſhould alſo be incloſed, or at leaſt a ring fence ought to be erected, ſo as the property of the tenant may be protected from the

the depredations of his neighbours. Theſe are all permanent improvements; and, agreeable to the principles of juſtice, ſhould be executed at the ſole expence of the proprietor.

I am ſenſible, that in ſeveral diſtricts much ground is to be found that is not worth ſuch improvements as I have deſcribed, but theſe need not on that account be neglected. They ought to be planted with ſuch varieties of timber trees as are moſt adapted to their ſoil and climate. Wood land anciently prevailed in Scotland to a great extent; and there ſeems no real reaſon why it might not ſtill thrive if proper care was taken to protect plantations in their early ſtage. The deadly feuds of the military Barons in former times, and the *letters of fire and ſword* iſſued by our law courts, contributed to the deſtruction of the numerous foreſts with which Scotland was interſperſed; and it is now time to reſtore them, ſeeing that ſo much land is to be found not calculated for improvement in any other way. To encourage tenants to plant, timber ought to be conſidered as a crop, which he that ſowed might alſo cut.

Fuel is now conſidered by many people as one of the neceſſaries of life; and aſſuredly it is of importance to provide a full ſupply for the comfort of the inhabitants. In many diſtricts much time is loſt in digging and preparing peats which might be devoted to better purpoſes were coal-mines more attentively ſought after. It would therefore be an adviſeable meaſure for the gentlemen of every county to imitate Dumfriesſhire in making mineralogical ſurveys; the expence would not be great, but the benefit would be immenſe. Your's, &c.

A——N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Benefit of keeping a Stock of Swine.*

SIR,

IT appears to me that a conſiderable advantage might be gained from keeping a greater number of ſwine upon tillage farms than is uſually done; and I ſhall ſtate the grounds of this opinion in a conciſe and diſtinct manner.

Swine are the only variety of granivorous animals that can be fed upon the offal of grain, or ſuch articles as would otherwiſe go to waſte about a farm ſteading. Since the erection of threſhing mathines, a much greater quantity of light grain is beat

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from the ſtraw than was gained when the flail was employed. To uſe this extra quantity to advantage becomes an important concern to the occupiers of land; and I venture to ſay, that the uſing of it in raiſing and ſupporting ſwine is by far the moſt profitable mode of conſuming an article, which, in other reſpects, is comparatively of little value.

Upon a tillage farm conſiſting of 300 acres, whereof 200 are kept under the plough, it is my opinion, that a ſum not leſs than 100l. Sterling may be annually gained from keeping ſwine, were the management arranged in a ſyſtematic manner. One main advantage of ſuch a branch of rural economy ariſes from little or no capital being required to carry it on, while the trouble and outlay attending it ſcarcely deſerve notice. With the addition of one acre of broad clover, and one acre of tares, for the ſummer and autumn months, and the like extent of ground for turnips and yams during the winter and ſpring months, the whole not exceeding 20l. in value, the ſtock of ſwine that I am now to recommend may be amply ſupported.

Were two breeding ſows kept on a farm of the ſize I have mentioned, and their produce reared by the farmer, it may be calculated, that 40 ſwine would be annually fed off, the value of which, in the months of January and February each year, the time when pork is moſt in demand, would be 50s. each, even granting that the price of pork was much lower than at preſent, and the total amount the ſum I have already condeſcended upon. That ſuch a number of ſwine can be ſupported and fed upon the offals of a 300 acre farm, and the other auxiliary articles ſpecified, may be pronounced a certain fact. I have tried it myſelf, though rather upon a ſmaller ſcale, and the profit gained has been fully more than I have ſtated. Where ſuch a ſyſtem of management is purſued, I decidedly recommend the ſmall breed of ſwine, becauſe they will feed in a ſhorter period, and thrive upon articles that would ſtarve the larger ſized animals. When I ſpeak of a ſmall breed, I do not mean thoſe that paſs by the name of Chineſe or pot-bellied ſwine. The kind I have in view is ſwine that will feed upon common fare to 7 or 8 ſtones Amſterdam when 11 or 12 months of age, or to 9 or 10 ſtone when put up in the houſe to receive better fare. I am ſorry that I cannot claſſify this breed, but it is by far the beſt for going on a farmer's dunghill, and will thrive where finer and larger breeds would be ſtunted and ſtarved.

The mode of management which I beg leave to recommend is, that a boar and two good ſows of a proper age ſhould conſtantly be kept, and that one young ſow ſhall annually be reared, in order to ſupply the others when they paſs maturity.

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I would caſt off the oldeſt ſows, *i. e.* feed them when they arrive at 3 years of age. which of courſe would cauſe four ſows to be in hand at one time. Theſe annually would produce more than the 40 pigs, which are to be held on; but the remainder might be ſold as they are weaned, there being a regular and ſteady demand in the country for young pigs.

It is obvious that, at the preſent rate of markets, 40 ſwine, weighing 7 or 8 ſtone each, are worth more money than I have ſtated; but, even upon the ſuppoſition that markets may fall conſiderably, the neat profit would ſtill be as much as is deſcribed. I apprehend that people will be readier to admit the truth of this part of the ſtatement, than that ſuch a number can be ſupported at ſo little expence; but this point can only be ſatisfactorily elucidated by an appeal to experience.

I have, for a number of years, kept a ſtock of ſwine in the way recommended. They go at large in the court or yard belonging to the farm, and receive a feeding of offal grain in the morning, and of yams or turnips in the evening; and the meat fed in this way has conſtantly drawn the higheſt price. They get alſo the diſh-waſhings of the houſe, any milk or whey that remains unconſumed, and have the dung-hill to roam upon, where perhaps more food is to be gathered, eſpecially if the horſes are fed upon unbroken grain, than is commonly imagined.

It will readily be figured, that under this mode of management, the latter end of ſummer and the harveſt months is the critical period for carrying on a ſtock of ſwine. During theſe months little threſhing goes forward, and horſes ſeldom receive any corn for aliment; hence all that can be conſiſtently attempted is to keep the animals in a growing ſtate, and prepare them for fattening cleverly, when food of a more nutritious quality can be procured. Clover and tares will do this effectually, the laſt particularly ſo when in a podded ſtate. Turnips can alſo be got by the end of September; and it muſt be recollected, that through the ſummer months a conſiderable quantity of milk and whey can be given, upon which ſwine will be found to thrive heartily.

That ſwine can be ſupported upon clover during ſummer is not a new doctrine. The practice has long prevailed in England, and ought to be adopted extenſively in this country. I once incloſed a ſmall part of a field with boards, into which I put my ſwine ſtock, taking care to put a ring into their noſe before hand, ſo as they might not injure the ground, and they throve very well.

In a word, I do not know a more beneficial ſtock upon a farm than ſwine, ſo long as the quantity kept is in proportion to the

extent of offals about the premiſſes. The other articles recommended are merely meant to render the conſumption of offals more beneficial, or to carry on the ſtock at periods when ſuch offals are ſcarce. The charge of attendance is very ſmall; indeed the benefit gained by the dung-hill will more than compenſate the expences incurred. To make as much profit as I have mentioned from cattle or ſheep requires a great advance of money; but in the article of ſwine hardly any is neceſſary, while the moſt part of the articles conſumed cannot, in any other way, be converted to ſuch beneficial purpoſes. I am, your's, &c.

A RURAL ECONOMIST.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Experiments on the Diſtillation of Roots.*

SIR,

IN your Magazine for April 1801, I mentioned my intention to make ſome experiments on the diſtillation of different roots; I now fulfil my promiſe, and hope the experiments will tend to uſeful purpoſes.

Having obtained the permiſſion and approbation of the Commiſſioners of Exciſe, I have diſtilled fifteen kinds of ſpirits, which, by the direction of that Honourable Board, will be ſent in a few days hence to their ware-houſe at Leith, that their qualities may be aſcertained by the Commiſſioners themſelves. Theſe fifteen kinds are,

1. *Potatoes* combined with malt, twice diſtilled.

2. The middle runnings of potatoes, in order to ſhew how fine a ſpirit may be made from potatoes only twice diſtilled.

3. Potatoes thrice diſtilled; in order to ſhew the difference between two and three diſtillations of this valuable root.

4. Potatoes thrice diſtilled, and having a ſmall quantity of the lees of red port wine mixed with the low wines or firſt diſtillation. By this mixture, and ſubſequent diſtillations, the eſſential oils of the potatoes are abſorbed or deſtroyed; and the flavour of the port wine lees alone remains.

5. Spirits from potatoe juice, which is commonly ſuppoſed to be deleterious. The effect of this experiment tends to prove, that the noxious qualities are in the skin rather than in the juice of the potatoe.

6. Spirits from *Carrots, thrice diſtilled.* This makes a very fine kind of ſpirit; and the mixture of wine lees was here judged unneceſſary, as the eſſential oils of the carrot are more agreeable than thoſe of the potatoe.

7. Spirits

7. Spirits from *White and Green Beet, twice diſtilled.* As the German chemiſts have been much employed in making ſugar from the beet, I wiſhed to ſee what kind of ſpirits it would yield; and am ſatisfied that it contains a great deal of well flavoured ſpirit.

8. Spirits from *Red Beet, thrice diſtilled;* in order to ſee how much beet ſpirits were improved by a third diſtillation.

9. Spirits from *Salſafy*, (the tragopogan porrifolium) *twice diſtilled.* The reaſon for diſtilling this root, which does not contain ſo much ſaccharine matter as any of the preceding plants, was, that the beſt judges of the comparative qualities of different vegetables, (I mean the cows) are extremely fond of ſalſafy.

10. Spirits from *Scorzonera.* This is a root which reſembles ſalſafy, and is much uſed in cookery on the continent of Europe. The ſpirits extracted from both theſe roots make very excellent liquors; and if uſed for that purpoſe in Great Britain, would ſuperſede the neceſſity of importing foreign liquors.

11. Spirits from *Parſnip.* This makes a very good ardent ſpirit, though it is not quite ſo palatable as that from carrots.

12. Spirits from *Ruta-baga*, or Swediſh turnip. This is a coarſe kind of ſpirit, when uſed by itſelf, though it may do when compounded with others. Common turnips are not worth the expence of diſtillation; and the ſpirits extracted from them are very coarſe.

13. Spirits from *Clover Hay.* This makes a good kind of cordial; but is not ſo agreeable in punch, or mixed with water.

14. Spirits from *Rye or Ray-Graſs Seeds.* This is juſt the reverſe of the preceding kind, making better punch than when uſed as a dram.

15. *All Spirits.* This is from the weak low wines of all the preceding roots mixed and diſtilled. It is an excellent kind of ſpirit, and ſhews that many articles will do very well in compoſition with others, which do not anſwer when uſed alone. A proportion of malt, generally one-third of the weight of the roots, was uſed for promoting the fermentation.

The reſult of theſe experiments appear to be the following:

1. The qualities of all ſorts of ſpirits are *ſtrength* and *flavour.* By uſing thoſe vegetables which abound moſt in ſaccharine matter, (ſuch as potatoes, carrots, beets, and parſnip), at leaſt thrice, and in well cultivated lands, four times more the quantity of ſpirit can be produced from an acre of green crop, than from an acre of any ſpecies of corn.

2. When any plant abounds in ſaccharine matter, but is not ſo well flavoured, let it be once diſtilled; and then let any other vegetable,

vegetable, whoſe flavouring or eſſential oils are much eſteemed, be fermented, and its waſh put among the low wines of the other; then let the whole maſs undergo other two diſtillations. By this means a great quantity of pure ſpirits will be obtained; and the eſſential oils of the ſecond or beſt flavoured kind only will remain.

3. In order to encourage diſtillation from roots, let a moderate tax at firſt be impoſed on the gallon of ſuch ſpirits; and let that tax be gradually augmented, as the diſtiller becomes better acquainted with the art of diſtilling them, and introduces machinery inſtead of manual labour, in cutting, bruiſing, or preparing them for the ſtill.

4. Let Great Britain, which cannot raiſe corn ſo cheap as other nations, ſupply the rectifiers chiefly from the green crop, (uſing malt only for promoting the fermentation) and we ſhall have little occaſion for ardent ſpirits from other nations.

5 By diſtilling roots, the quantity of manure will become every year greater, and the advantages every way to Britiſh agriculture will be incalculable; while great encouragement is given for Britiſh labour, and alſo in unfruitful ſeaſons we can apply to the purpoſe of human food a much greater quantity and variety of roots, than we would otherwiſe have raiſed in our iſland.

6. I am far from pretending to have carried theſe experiments ſo far as they might be carried, even by myſelf. But I firſt ſtarted the idea of diſtilling from roots, in the Diſtillery Committee of the Houſe of Commons, when I was examined before them in April 1798; and at their deſire I conducted a ſet of experiments in diſtillation in ſpring 1799, when I diſtilled, beſides malt and raw grain, both carrots and potatoes, with the approbation and permiſſion of the Commiſſioners of Exciſe, who very obligingly ordered the ſuperior and officer of the diſtrict to give me every aſſiſtance in their power: I have now diſtilled ſeveral other kinds of roots. But with the whole vegetable world before us, diſtillation may be carried much farther to the benefit of the agriculture, commerce, and revenue of Great Britain. In conducting theſe experiments I have no intereſt, but what every man has in the proſperity of his country.

GEO. SKENE KEITH.

*Manſe of Keith hall, Oct.* 18. 1802.

FOR

FOR THE FARMER'S MAGAZINE.

## *A short History of Tythes, Teinds or Tenths, as applicable to Scotland*

TYTHES are of Jewish institution. Under the law of Moses, the whole tribe of Levi were to be maintained out of the industry of the other eleven Israelitish tribes, who were bound to pay them a tenth part of their own income. But we seem to have as little connection with this particular part of the Jewish policy, as with that other part of the ceremonial law which forbids the race of Jacob to eat swine's flesh. Accordingly the Apostles, when the question was debated, whether the Gentile converts to Christianity should be bound by the precepts of the ceremonial law of Moses, observe, "Now, therefore, why tempt "ye God to put a yoke on the neck of the disciples, which neither we nor our fathers were able to bear."

Tythes were, however, a yoke of too much importance for the good of the Romish clergy to be allowed to rest in this way; and no sooner were corruptions begun to take place in the early Christian church, than the clergy made use of the threatenings of the Jewish law, to compel their Christian flock to be tythed. The stratagems they fell upon for this purpose, when hardly one of the laity of Europe could either read or write, may be gathered from their own repositories of Monkish Latin; and were successfully practised in the ages of darkness and superstition.

Montesquieu is of opinion, that the Emperor Charlemagne was the first that established tythes in the Christian world; but in this I think it is probable he is mistaken, for in a letter wrote by Saint Hieronymus to Damasus, who was Bishop of Rome as early as 366, he speaks of tythes as a thing from which he had his living; and this Saint made a celebrated discourse, which is extant, upon the payment of tythes, from the third chapter of Malachi, verse 7. and seq. There is a sermon of St. Augustine also extant upon the same subject, wherein he brings forward and enforces the rights of Romish priests to receive tythes, in such ingenious and dexterous terms, that it is not wonderful the ignorant people believed and obeyed.

We have upon record among the *extravagantes communes a diversis Romanis pontificibus*, a long direction by Pope Boniface the 8th, in the year 1301, to the collectors of tythes, specifying all the particular articles for which tythes were to be demanded; such as for woods, gardens, wine, wheat, and out of personal labours and income of every kind.

Tythes are defined, by the pontifical law, to be the tenth part of all moveable goods, which belongs to and is due to God, and which

which he hath inclined to be reſtored to himſelf as a ſymbol of his univerſal dominion, and are payable to the clergy by divine and human conſtitutions. They are more correctly defined by Blackſtone, as follows: "The tenth part of the increaſe yearly ariſing and renewing from the profits of lands, the ſtock upon lands, and the perſonal induſtry of the inhabitants, and due to the clergy." They are divided into two kinds, perſonal and predial; perſonal teinds ariſe from all ſorts of induſtry and buſineſs; predial from all ſorts of fruits, produce, or profit of lands, without deducting any expence of culture.

There was introduced alſo afterwards another diſtinction or diviſion of tythes into parſonage and vicarage. The former are called in the Latin charters in Scotland, *decimae rectoriae*, and ſometimes *decimae garbales*; the latter are called *decimae vicariae*.

The vicar was the prieſt employed by the biſhop or prelate to do the duties of a pariſh church. The prelate ordinarily retained to himſelf the parſonage or great teinds, which were thoſe of corn, viz. wheat, barley, oats, peaſe, &c. and he beſtowed upon his vicar all the reſt of the teinds, as flax, hemp, calves, fiſh, eggs, milk, &c.

Even in the times of Popery, every ſort of tythes that were payable in other Roman Catholic countries were not inſiſted on by the clergy of Scotland. The parſonage teinds were univerſally due and demanded, whereas the payment of vicarage teinds appears only to have been local, and paid in thoſe parts of the country where there was not a ſufficient ſubſiſtence to the clergy, from the tenth of the corn. Therefore it became a rule of law, that the vicarage or ſmall tythes could not be exacted, except where there had been an uſe of payment. By the law of Scotland, the tythe of animals and of things produced from animals, as lamb, wool, milk, cheeſe, &c. has been adjudged to be due, though not accuſtomed to be paid. But flax, plants, roots, with the other product of gardens, are not ſubject to tythe, unleſs uſe of payment be proved. I have never underſtood that any perſonal tythes ariſing merely from labour were due to the clergy by the cuſtom of Scotland, unleſs the tythes of fiſh can be accounted as ſuch.

Upon the reformation of religion in Scotland, all church lands and teinds fell to the Crown, under the burden of moderate ſtipends to the reformed clergy, and a reſervation to them of the parſonage houſe or manſe, and a few acres of land called the glebe, which had belonged to the Popiſh churchmen; and James the 6th, profuſely, and in many caſes illegally, conferred the ſpoils of the church on his favourites and dependents; which lands were erected into temporal lordſhips, the proprietors of which

which, were sometimes called *Lords of Erection*, and sometimes *titulars of the teinds*.

To put a stop to these alienations, by which the revenue of the Crown suffered so considerably, all church property was declared to be annexed to the Crown, and to remain for ever with it unalienably, by an Act of the Scotch Parliament in 1587, excepting the lands that had been already disposed of. Notwithstanding this statute of annexation, the King continued to make further donations, which produced another statute in 1592, declaring all such as had been made after the act 1587 void, except those that had been granted to persons who had received, since that act, the honour of Lords of Parliament.

King Charles I. sensible of the loss his revenue suffered by the donations of his father James 6th, and being desirous to provide the parochial clergy in reasonable stipends out of the tythes, as they had been at a great loss to obtain any thing sufficient from the titulars of the teinds, executed, soon after his advancement to the Crown, a revocation of all grants of church lands, or of tythes made by his father to the Crown's prejudice: and the year after brought an action at law for reducing the donations granted before and after the act of annexation.

As persons of the highest rank and distinction were parties in this action of reduction, it created great heats and animosities. Concessions, however, were soon made on both sides. But the article the King chiefly insisted on was calculated not to serve his own interest, but to correct the abuses committed in regard to the drawing of the teinds; and therefore the litigants very readily agreed to refer themselves entirely to his Majesty, which they did by a formal submission in 1628.

The abuses relative to the drawing of tythes committed by these titulars of the teinds, or donees of the Crown, principally regarded the proprietors of lands who were liable to pay them teinds. These titulars sometimes had in view to force the proprietors of lands to buy up the right to their tythes at an extravagant rate, by levying the tythes in an oppressive manner. The most usual and natural way of making the tythes effectual, was by the titulars separating the tythe or tenth from the stock, or remaining nine-tenths of the crop, after the corns were reaped, and carrying it off from the field to his own granaries. This got the name of *drawn teind;* and was frequently attended with grievous hardships on the owner of the ground or his tenant; for every possessor of land who presumed, after reaping his corns, to carry off any part of them from the field till the titular had drawn his tythe, was, from the first establishment of the churches right, subjected to severe penalties: and the titular

sometimes

sometimes from indolence, but most frequently with a view of compelling the proprietor to purchase the leading of his tythes at an high price, delayed the drawing of his tythe till great part of the crop was rotten. For redressing, or at least alleviating this grievance, the tything of corns was, after the reformation, regulated by sundry Statutes, 1606, c. 8: 1612, c. 5: 1617, c. 9. By the last of which, the owner of the crop is directed to require the titular or tythe-master eight days after cutting the several kinds of corns therein specified, to draw his tythe in four days after, upon the elapsing of which, he may complete his harvest. But he is not at liberty by that last act, as he was by the two former, to neglect the tythe after having set it apart for the titular; he must also preserve it from being eaten by cattle for eight days after the expiring of the time contained in the requisition; which, if he do, he is by the act declared free from spuilzie or wrongous intromission. The remedy provided by these acts, however, was far from being adequate to the evil it was intended to cure.

Sometimes, indeed, the titular, instead of drawing his tythes, was prevailed upon to grant a lease of them to the proprietor for a neat yearly tack duty, and sometimes he accepted of a stated quantity of corns, commonly called rental bolls, either in virtue of a written rent roll, or barely by the use of payment, which rent-roll, or rental, was presumed to be the full value of the tythes.

His Majesty King Charles the 1st, by his decreet arbitral upon the submission above mentioned, dated 2d September 1629, and subjoined to the acts of parliament of his reign, put an end to all these abuses complained of, in regard to the drawing of teinds. He made it lawful to the proprietors of lands liable in teind, to sue the titulars of their teinds for a valuation of them, in order that they might never after such valuation be exigible in kind. He made it also lawful to these proprietors, if they pleased, to demand and obtain a sale of their teinds before commissioners named or to be named for that purpose by the Crown. These commissioners are the judges of the Court of Session, who now sit every Wednesday during session time, as commissioners for the valuation and sale of tythes, and for regulating the stipends due to the clergy.

Where the stipend was drawn in kind by the titular, and consequently might be valued separately from the stock, it was, by the decree arbitral, ordered to be valued as its extent should be ascertained, upon a proof before the commissioners; but the King directed a fifth part to be deducted from the teind in favours of the proprietor of the lands, which was therefore called the *King's ease*. The rate of teind, when it was possessed by the proprietor

the proprietor of lands, jointly with the ſtock, for payment of a certain ſum or duty to the titular, and ſo did not admit a ſeparate valuation, was fixed at a fifth part of the conſtant free yearly rent of the lands, which was accounted a reaſonable ſurrogatum, in place of a tenth of the increaſe. On payment of the yearly ſums, ſo fixed, to the titulars of the teinds, the proprietors of land were declared entitled to the whole crop.

Where the proprietor wants not only to be free of the delivery of tithes in kind, but inſiſts alſo to buy the teinds of his own lands, the titular is, by the decreet-arbitral, obliged, in almoſt all caſes, to ſell them at nine years purchaſe of the valued teind-duty.

By theſe means, all abuſes that were any way diſagreeable to proprietors of land, in conſequence of their being obliged to pay a tenth part of the income of their property, were completely put an end to in Scotland. And now, it is believed, there is not a proprietor or farmer in Scotland that is any way troubled about the payment of tithes in kind, (or at leaſt that muſt needs be ſo), a burden that is often ſo unpleaſantly felt in her ſiſter kingdom.

Except England, it is ſaid, there is not a country in the world that continues to pay tithes in kind, beſides Spain and Portugal.

The Scotch Preſbyterian clergy have moderate ſtipends allowed to them, generally of from one to two hundred pounds a-year, payable commonly out of the teinds of the pariſh. If they have leſs, it is occaſioned by the teinds of the pariſh, as valued in conſequence of the above-mentioned decreet-arbitral, not being ſufficient to afford a better ſtipend. In ſuch caſes, in general, the Court of Commiſſioners of Teinds, upon the application of the landed proprietors, unite two pariſhes together, and thereby a good ſtipend is afforded to the ſurviving miniſter, and his ſucceſſors in office. There remains, however, a hardſhip upon the preſent incumbents, which ought to be redreſſed. In any caſe where the ſtipend is not ſufficient for maintaining the clergyman in a reſpectable way, the old decrees of the valuation of the teinds of the whole pariſh ought to be opened up, to the effect only of affording a reaſonable ſtipend, and new valuations ſhould be made. This, it is alleged, will, in all caſes, make ſuch a riſe in the valuations of lands, occaſioned by the difference of the money-price of produce, as will allow the clergyman a ſufficiency to live on out of the teinds. If this is not done, the valued teind of moſt pariſhes muſt in time become exhauſted, and inſufficient to maintain a clergyman of any reſpectability. Nor will the remedy of uniting two or more pariſhes always anſwer; for ſometimes pariſhes of too great an extent already have the old valuations of their teinds exhauſted: and the Commiſſioners do not conſider themſelves as entitled to make new valuations; although the mat-

ter feems fo reafonable, that it is highly probable the Houfe of Peers would not refufe its aflent to it.

The Scotch Teind Court, it is believed, alfo, for a conſiderable time, held it as law, that if they had once fixed to the clergyman of any parifh a fufficient augmented income, they had it not in their power to increafe the ſtipend again in the fame pariſh. That opinion has been got over, and it were to be wiſhed the other matter of old valuations were alſo reconſidered.

When a clergyman applies to the Court of Teinds for an augmentation of his living, the teinds in the hands of a lay titular, when theſe are not exhauſted by his former ſtipend, fall firſt to be allocated to him; and if the titular has let theſe teinds to the proprietor of the lands from which they are payable, in leaſe or tack, the tack-duty falls to be allocated to the clergymen. This ſort is called *the free teinds*. Where the tack-duty falls ſhort, the tack itſelf is burdened, or, in other words, the ſurplus teinds over and above the tack-duty. Where this likewiſe proves deficient, the allocation to the clergyman falls on the proprietors who have purchaſed their teinds; unleſs the titular, by his conveyance to the proprietor, had declared that he warranted his grant againſt future augmentations; in which caſe the teinds of the lands, belonging in property to the titular himſelf, muſt be allocated in the firſt place. Where there is a ſufficiency of free teinds in a pariſh, the titular may allocate any of them he thinks fit for the miniſter's ſtipend. Miniſters' glebes are free from teind, and alſo thoſe lands of which churchmen, in times of Popery, had been proprietors; alſo ſuch as they had feued or ſold to laymen, with a clauſe declaring their right both to ſtock and teind.

*Oct.* 9. 1802. A. S.

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FOR THE FARMER'S MAGAZINE.

*Strictures on Farm-Management near London, in Letters from a Gentleman in Scotland to his Friend in England.*

## LETTER XII.

(Continued from p. 471. vol. 3.)

I AM rather at a loſs to point out the moſt profitable mode of breaking up the old graſs-land for tillage, not as to the general principle, but merely in ſome particular circumſtances, as there are ſome crops grown in your neighbourhood with which I am unacquainted. Perhaps it ought firſt to be paired and burnt, that followed by a crop of rape allowed to ripen its ſeed,

and the rape ſucceeded by oats. In this country, we ſhould only take a crop of oats, without pairing and burning, and without rape. Not pretending to any knowledge of the other practice, I ſhall confine myſelf to the one I know.

I muſt, however, here mention, that, in my opinion, your pairing-plough cannot anſwer the purpoſe effectually, unleſs the ſurface of the land it has to pair is level like a bowling-green. Every inequality, of which your meadows have abundance, will either make the ſhare get far too deep, or cauſe the wheels to ſtart it out of the ground altogether. In fact, I obſerved a good deal of land, in the courſe of my journey, that had been very imperfectly paired; owing, as I ſuppoſed, to the inadequate action of a ſimilar pairing-plough. When ſuch is the caſe, the advantages of pairing and burning muſt be, in ſo far, loſt to the land.

Beſides converting all the vegetable matter in the paired ſurface into an active manure, one of the great advantages of burning is the deſtruction of the roots and ſeeds of weeds, and it thus becomes an excellent preparation for clean huſbandry, when effectually performed. But every part of the ſurface that happens to be miſſed muſt become ſources of future ſupply of weeds, by both roots and ſeeds remaining undeſtroyed. In this view, therefore, the ſmall original ſaving of hand-labour, by pairing imperfectly with a plough drawn by horſes, inſtead of performing the operation in an effectual and complete manner with the breaſt-plough, as it is called, or pairing-ſpade, turns out eventually a real and heavy loſs. If, therefore, you ſhould pair your land, and ſtill chooſe to employ the pairing-plough, I would ſtrongly recommend that the whole ſhould be carefully gone over afterwards, and every morſel of ſod, that has eſcaped the plough, turned over with the pairing-ſpade.

I ſhall now ſuppoſe your old graſs-land broken up in either way. If paired, I would follow the rape-crop with a perfect fallow, dunged for wheat. If it is not to be paired, I would ſow oats, after once ploughing, and make a perfect fallow ſucceed the oats.

On this kind of land, inſtead of the Angus oats, recommended to be ſown on the old tillage-lands, in my former letter, I would adviſe to get ſome of the very beſt Poland oats from the London market. Theſe, on ſtrong rich ſoil, are very prolific, and they ſell at a high price in London. Beſides they ripen earlier than almoſt any other grain, which is a very great advantage on a large farm, as it brings on the harveſt in regular ſucceſſion, inſtead of the whole coming forward at once. In ſowing Poland oats, it is neceſſary to give a good deal of ſeed; as they do not plant out nearly ſo much as the other kinds. In reaping them, it is ne-

ceſſary to cut them before they ſeem thoroughly ripe; as they are extremely apt to ſhake out from wind, or even in handling during harveſt, if allowed to ſtand too long. They are known to fill and harden in the ſheaf after they are cut: Proverbially, they ripen during *nine* days in the ſheaf.

After the oats, or rape, the land muſt get a perfect fallow, well dunged for wheat. After which it muſt have alternate crops of drilled beans or clover hay, with wheat, or barley, or oats, judiciouſly interpoſed. And on every occaſion, eſpecial care is to be taken to clean the land thoroughly from weeds, and to preſerve it ſo.

I know that ſoil like yours, which has been very long in graſs, paſtured by ſheep, and after having been once very thoroughly cleaned from weeds, by a perfectly well-conducted fallow, may grow wheat and drilled beans alternately, for a conſiderable time, to great advantage, on condition that it gets a decent dreſſing with dung once every four years.

If rape has been taken at firſt, after pairing and burning, I ſhould not be diſpoſed to interpoſe wheat ſo often in the ſucceeding rotation, as when the land has been broken up with a crop of oats only. In the caſe of rape, I would adviſe to ſubſtitute barley in place of wheat.

When barley is to be ſown, the land ought to be reduced into very fine tilth, in the following manner. Having been ridged up before winter by a gathering-furrow, and all the water-furrows and croſs-trenches carefully opened out, it is to be ploughed in early ſpring, with a cleaving-furrow, to lay the land level; it is then to be croſs-ploughed, harrowed, and rolled, and immediately afterwards ploughed end-long with a gathering-furrow. The ſeed is then ſown and harrowed in: and, before the harrowing is finiſhed, red clover-ſeed is to be ſown. Then the water-furrows and croſs-trenches are formed, the whole field laid even by a ſmooth roller, and the water-drains opened carefully by the ſpade.

The mixture for hay-ſeeds, which I would recommend on your ſoil, is, half a buſhel of clean London rye-graſs, and from ſixteen to eighteen pounds of red clover-ſeed to each acre. One crop of hay only is to be taken, and the after-math paſtured with ſheep.

As I am altogether unacquainted with the cultivation of ſainfoin, or cinque foil, and beſides do not know whether it might thrive in your ſoil, I have not preſumed to take that crop into conſideration. I am informed that, in ſome places, it is mixed, to great advantage, among the hay-ſeeds. In that caſe, the firſt year's produce is a luxuriant crop of clover-hay, with a little ſainfoin among it. The ſecond year gives a mixed crop of clover and ſainfoin; and, in the third year, the clover is moſtly gone, and the

field

field is fully ſtocked with ſainfoin. I ſhould not, however, adviſe ſainfoin to be much truſted to on your land; as I underſtand its appropriate ſoil to be that which is incumbent on a limeſtone gravel.

Upon the whole, the ſyſtem, of rotation which I would recommend as the moſt adviſeable for improving your old graſs-land, is as follows. 1ſt year, Break up the hay for a crop of oats. 2d year, Give the land a perfect fallow, well dunged, and ſow wheat before winter. 3d year, The land is occupied by the wheat crop, and the ſtubble is ploughed before winter, as a preparation for the enſuing crop of beans. 4th year, Beans drilled, horſe-hoed, hand-hoed, and carefully weeded: The bean-ſtubble ploughed before winter, previous to the enſuing crop of barley. 5th year, The land gets three ploughings, as formerly directed, and is ſown with barley and hay-ſeeds. 6th year, One crop of hay is cut, and the after-math is paſtured: or the after-math may be dunged and ploughed down for wheat. 7th year, The one year's lay is ploughed once for a crop of oats, or the land is under a crop of wheat. If a ſufficiency of dung can be ſpared, without robbing the regular fallows of the farm, and if there is no abſolute neceſſity for the after-math in paſture, the wheat may very properly be taken in this year. In either caſe, the ſtubble muſt be ploughed up before winter, preparatory to the ſubſequent fallow. 8th year, The land gets a perfect fallow, and is ſowed with wheat, well dunged. After this crop of wheat, in the ninth year of the rotation, either the ſame courſe goes round again, or, what I conſider as more adviſeable, the land is thrown into the courſe of rotation recommended for improving the old tillage-lands. In the latter caſe, the land in future is to be kept under theſe two rotations alternately.

If the land has been broken up from old graſs, by pairing and ſod-burning, the courſe I ſhould recommend is very ſimilar to the foregoing, as follows:

1ſt year, Sod-burning, ſown with rape. 2d year, Rape, the ſtubble ploughed before winter. 3d year, Perfect fallow, dunged and ſown with wheat. 4th year, Wheat, the ſtubble ploughed before winter. 5th year, Drilled beans. 6th year, Barley, with hay-ſeeds. 7th year, Hay; the after-math paſtured, or dunged and ploughed down for wheat. 8th year, Oats or wheat. 9th year, Perfect fallow, well dunged for wheat; and ſo round again, but without the ſod-burning or rape: Or rather, as before recommended, commencing one courſe of the rotation already pointed out for the old tillage-lands.

After the two kinds of land have been brought to an equality, by each having undergone the courſes of rotation above recommended,

mended, they may be thrown together, and the whole farm may then be carried on under a uniform courſe of rotation, compounded of the two kinds taken alternately, or what may be termed a double ſhift. By this means the ſoil will be continually preſerved in full productive vigour, and its fertility will be always exerted to the greateſt poſſible advantage.

In this ſecondary courſe of rotation, after the lands have been brought into full order, reſpect muſt be had to the general convenience of the farm-buſineſs, ſo as not to accumulate too much work in any particular year, and always to have a convenient proportion of the whole in hay for winter fodder, and in paſture for keeping the ſtock in ſummer.

I think I ſee you ſmile, while you read this long-extended plan of operations, as being calculated, like an entail, to tie down future generations, according to the ideas of the preſent race. In the length of time this courſe of huſbandry will take to go through, you will moſt properly object, that improvements in agriculture may occur, ſufficient to alter all our preſent views and ideas. This is moſt certainly true: But, in all operations, we ought unqueſtionably to ſet out upon ſome regularly-arranged plan, previouſly contrived to the beſt of our ſkill; and this muſt be afterwards modified, altered, and amended, as circumſtances ariſe, or as farther experience and improved judgment ſhall guide.

I by no means incline to fix you to the liſt of crops which I have propoſed, and mean only to ſhow diſtinctly the general principle, according to my beſt judgment in the matter, by which two crops of what is called *white corn* ſhall never ſucceed each other, but ſhall always have either a perfect fallow, a fallow crop, a green or herbage crop, or paſture interpoſed. The general principle upon which I proceed is this, that paſture is invariably to be made ſubſervient to *tillage;* to freſhen and ameliorate the ſoil, but never perſiſted in ſo long as to run the ſoil into weeds, inſtead of profitable paſture-plants: and, reciprocally, *tillage* is as invariably to be made ſubſervient to paſture, by extirpating weeds from the ſoil, but never continued ſo long as to exhauſt its vigour, either for ſubſequent paſture, or for after-tillage-crops. By this plan, the two modes of occupancy of land, tillage and paſture, are made to yield the greateſt poſſible profit to the occupier: And, by conſtantly keeping up the productiveneſs of the ſoil in full vigour, it is likewiſe the beſt poſſible mode of managing land for the benefit of the proprietor; as land which is perfectly clean, and in perfect vigour for vegetable production, will always draw its full rental-value when offered for tenantcy. Yours, &c.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Modern Improvement of Farm Stock.*

SIR,

I obſerved a few weeks ago, in all the Edinburgh newſpapers, a high panegyric paid to Mr Brodie, at Upper Keith, "for the "amazing expence and trouble he has been at, in improving his "breed of ſheep, by giving one hundred guineas for twenty ewes, "fifty and eighty guineas for the hire of a ram, and having in "his poſſeſſion a grandſon of the famous Leiceſterſhire ram, which "was let to this country at no leſs a ſum than three hundred "guineas per ſeaſon: and that our butcher-markets have often "ſtood indebted to Mr Brodie, who was the firſt perſon that in-"troduced the feeding of houſe-lamb into Scotland." Such puffing will, no doubt, prove extremely diſagreeable to a perſon of Mr Brodie's modeſty and good ſenſe, as he never fed what is called houſe-lamb in his life; nor has there been a ſingle carcaſe of houſe-lamb to be ſeen in the Edinburgh market for many years paſt. I believe houſe-lamb was firſt fed in Scotland by the late Mr Preſident Dundas, principally for the uſe of his own table; it being well known, that this gentleman gave equal ſatisfaction, when preſiding at the feſtive board, as on the bench of juſtice. Robert Wight, farmer at Murrays, in Eaſt Lothian, afterwards attempted to introduce them into the Edinburgh market, as a regular branch of buſineſs, but complained that the citizens of Edinburgh did not underſtand good eating well enough, and therefore would not give a ſufficient price, to indemnify the expence of fattening lamb entirely upon milk in the houſe. It is a certain fact, that a quarter of his lamb, ſo fed, weighing eight pounds, completely fat, and its fleſh as white and delicate as any chicken, could, at that period (about twenty years ago), bring no more than 2s. 6d. per quarter; on which account, after trying it one ſeaſon, he wiſely gave up the trade, as all the old reputable butchers in the Edinburgh market can teſtify. It is no doubt true, that Mr Brodie, ſome time ago, bred *early* lamb for ſupplying the Edinburgh market; but a quarter of this early lamb, weighing, perhaps, 2½ or 3 lbs. no more reſembled the houſe-lamb I have mentioned, or what is brought every day to the London market, than the leg of a cat, or calf brought to light, in the Cæſarean operation, by the butcher's knife, reſembles a quarter of Strathaven veal, when fed in the beſt ſtyle; nor can it be ſaid that Mr Brodie was the firſt who introduced early lamb; for it was ſold by Deacons Cumming and Mellis, in the Edinburgh market, long before he entered upon buſineſs.

If

If Mr Brodie has merit for introducing a fine high-priced breed of sheep, upon his farm at Upper Keith, it ought also to be known, that many other people, in East Lothian and Berwickshire, have purchased stock at equal high prices, and, should the mania for fine breeds, which at present rages in England, extend into Scotland, and the gentlemen and farmers catch the infection, there is not a doubt but that it will turn out a profitable concern to all these gentlemen. Who, however, but those who are interested in turning this fashionable folly to advantage, can hear of the extravagant prices given for rams, ewes, bulls, &c. without laughing at the folly of mankind? For Nature, distributing her gifts with a more equal hand, by no means countenances such disparity in value amongst individuals of the same species. These, therefore, who give 50, 100, or 300 guineas for a ram or a bull, may be justly ranked with those who give similar sums for a tulip-root, auricula, or Queen Anne's farthing, and make the purchase with the same view, either to feed their vanity, or advance their interest.

Do these modern reformers of stock, with all their art, advance the interest of the public? or are our butcher-markets indebted to them, so as to have their mighty deeds puffed off in newspapers, and their names transmitted to posterity, as benefactors of their country? I suspect not. Does the Leicester ram, or his grandson, get stock, producing wool, that can be manufactured into broad cloth, of all the glowing colours of the rainbow, when reflecting the glories of the meridian sun? No: Alas, almost when white-washed with the fumes of burning brimstone, as a modest covering to the beauties of nature, it can only be wrought up into a raw blanket, or flannel petticoat, which the unhallowed finger must not touch, nor the eye look upon. Do they get stock, whose flesh is more tender and delicate than that of the smaller native breeds of our island? By no means: Their carcases contain a smaller quantity of flesh in proportion to the fat, and that flesh is more muscular, and coarser grained, and consequently not near such delicate eating as the flesh of the smaller animals. Wherein, therefore, does the excellence of this fine, high-priced breed of sheep consist? In having their surfaces covered over with a thick coating of oleaginous fat, like a seal or a porpoise, which cannot be eaten by any man of taste, and is only fit to glide down the throat of a Newcastle coal-heaver. I have not a doubt, when this *improved breed* is brought to perfection, and becomes general, that the fat will be cut off from the surface, before the carcases are brought to the butcher-market, and barrelled up for the purpose of making soap and candle, as the blubber is cut off from the surface of the whale. How different from this is the delicate flesh of the small South Down sheep, or those of the Cheviot hills; the first, well adapted for thriving in the

the ſuperior climate and paſtures of England, and affording wool, for working up into the fineſt fabrics of broad cloth; the other, a more hardy race, of all others the beſt ſuited for improving the ſheep and wool on the mountains of Scotland, alſo carrying wool, which can be manufactured into excellent cloth. A wedder hog, of the Cheviot breed, bred upon one of the mountainous farms belonging to the Duke of Buccleugh, was ſome time ago ſlaughtered for family-uſe, after being grazed for twelve months in the low country, without, however, taſting turnips, or any thing but graſs, during the winter, and ſpring months; and when killed, weighed 13½ pounds per quarter, and had in him 15½ pounds of tallow; a moſt extraordinary quantity for ſo ſmall a ſheep, of little more than a year old. This, however, will be nothing thought of by the modern reformers of ſtock, who, upon all occaſions, puff off their improved monſters, of 20, 25, and 30 pounds the quarter, with their ſurface coatings of fat, many inches thick, like a ſeal or Hampſhire hog. But are our butcher-markets indebted to theſe ſea-calves in ſheep's clothing? No. Would the gods of Iſrael, Mr Pitt, or Mr Dundas, reliſh them, even if ſtewed in claret or burgundy? No. Do the butchers commend them? No. On the contrary, they celebrate the native beauties of the black-faced ſheep, bred on the mountains, and fattened on the plains of Scotland, as ſurpaſſing all the improved breeds yet introduced: and, in this chorus, will join every judge of good eating, and adept in the ancient ſchool of

*Oct.* 1802. EPICURUS.

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*Remarks on the above Paper,*

BY THE CONDUCTOR.

THIS Magazine is "open to all parties, and influenced by none;" therefore, though we entertain the higheſt reſpect for the gentleman whoſe ſyſtem is animadverted upon, we have given the above animadverſions a place, and will, with equal pleaſure, receive any anſwer from Mr Brodie or his friends. Our worthy correſpondent has certainly conſidered only one ſide of the queſtion, and we ſhall ſupply his deficiency.

With regard to the feeding of houſe-lamb, we believe our correſpondent is in the right, therefore paſs over that branch of the animadverſions; but, reſpecting the merit of the improved breed of ſheep, *i. e.* thoſe of the Leiceſter ſort (for they are all derived from the breed of Mr Bakewell), we are not ſure if he has conſidered the ſubject in a true farming point of view. That they

are not ſo agreeable to the epicure's palate, we concede; though we by no means allow this to be the criterion which ſhould determine the merits of the matter.

To a farmer, the ſureſt evidence of the goodneſs or badneſs of any ſyſtem is the value or profit that may be derived from putting that ſyſtem in execution, not the quality or richneſs of the article that is produced. According to this principle, the comparative value of any two breeds of ſheep depends upon which will return the greateſt price for a given quantity of food. That the new Leiceſter breed are, in this reſpect, preferable, is now agreed upon by three fourths of profeſſional people; and, though the diſciples of Epicurus may condemn them, not in reſpect of profit or loſs, but merely becauſe they are not ſo ſavoury to their appetites, we apprehend their ſentence is irrelevant in the deciſion of the main queſtion.

That the intrinſic value of rams and ewes of this breed is greatly below the ſums for which they have been ſold, and that much quackery has been practiſed in the arrangement of ſales, are very probable circumſtances; but we are inclined to think that theſe things prevail in every new trade, and will be given up whenever the articles come into more general uſe. The value of any thing, to be ſure, is juſt exactly what it will bring; and ſo long as no improper means are uſed, every man has a good right to diſpoſe of his articles at the higheſt rates the ſtate of the market will admit.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Query concerning the Culture of Moſſes.*

SIR,

HAVING a large tract of peat-moſs, which I am deſirous to improve, I ſhall be much obliged to you, or any of your correſpondents who have improved ſuch foils, or who have obſerved the improvement made by others, for an account of their mode of culture; and I particularly requeſt it to be mentioned, whether lime is conſidered as neceſſary, as I cannot command ſuch manure at a moderate expence. If my informer will be pleaſed to acquaint me where I can ſee ſuch improved moſſes, his precepts will be the more acceptable.

It ſeems proper, however, that I ſhould mention, that I have ſeen an account of the improvement of the moſſes at Swindrigmuir; but as lime is there conſidered as eſſential, that mode of culture does not ſuit me.

L NOVICE JUNIOR.

FOR THE FARMER'S MAGAZINE.

## *A short Abridgement of Elkington's Treatise on draining Land.*

As Mr Elkington's work upon draining land is a large 4to, with plates, at an exorbitant price, which few farmers may be disposed to lay out, I have made the following notes from it, which seem to contain the substance of the book.

Introduction, page 3d. The *rot*, that destructive malady among sheep, chiefly proceeds from the nature of the herbage, which too much noxious moisture produces; and as it is a disease hitherto deemed incurable, it can only be *prevented* by means of draining. (See the method he proposes afterwards.)

Exhalations from moss and marshy grounds increase the humidity of the climate, and make the harvests late and precarious.

Page 8. Account of the most approved method.

Draining depends upon *three* points. 1st, Upon finding the main-spring, or cause of the mischief, without which nothing effectual can be done. 2d, Upon taking the level of that spring, and ascertaining its *subterranean bearings*, a measure never practised (it is asserted) till Mr Elkington discovered the advantage to be derived from it;* for if the drain is cut a yard below the line of the spring, you can never reach the water that issues from it, and, by ascertaining that line by means of levelling, you can cut off the spring effectually, and consequently drain the land in the cheapest and most eligible manner. 3dly, By making use of the augre to reach *or tap* the spring, where the depth of the drain is not sufficient for the purpose

Page 17. The great object of Mr Elkington's system is, that of draining bogs, by cutting off entirely the source of the springs, or subterraneous water, that causes the wetness, either by flowing over the surface, or by being long confined under it. If the springs have a natural outlet, the object of the drain is to lower and enlarge it, which, by giving the water a more free and easy channel, will sooner discharge and drain it off, or will reduce it to a level so far below the surface, as to prevent its overflowings: Where the springs have no apparent outlet, but are either confined so far below the surface, as to injure it by continued moisture, or by oozing out imperceptibly by any small pores of the upper soil; the object of the drain is to give a proper vent to the water, and



* It is said Dr James Anderson, late of Edinburgh, had published an account of this ten years before. That others had practised it in the Lothians; although, on this idea, Mr Elkington got a large premium from the Board of Agriculture. As Elkington was merely a labourer, and no scholar, I believe it was a discovery to him, though others had hit on the same: Whether he alone should have been rewarded is the question?

to extract more quickly and effectually what has before been pent up in the bottom of the ſoil. The object of the augre, which, in many caſes, is the *ſine qua non* (the indiſpenſable requiſite) of the buſineſs, is ſimply to reach or *tap* the ſpring, and to give vent to the water thus pent up, when the depth of the drain does not reach it; where the level of the outlet will not admit of its being cut to that depth, and where the expence of cutting ſo deep would be very great, and the execution of it very difficult.

Page 19. Springs riſing in a regular line, along the upper ſide of a wet ſurface. Make ditch along the lower level of the *ſtrata* containing them, another thence to a brook.

Page 20. Spring-bogs. Drain cut along the level of the lower ſpring, and another to a brook.

Page 23. It is of material conſequence to aſcertain which of the different outlets, that may appear on the ſurface, is the main-ſpring or throne from which the outlets are ſupplied; for, by cutting off that, the others become dry. If on the bank, or ſloping ſurface, from whence they proceed, they are found to break out at different levels, according to the wetneſs of the ſeaſon, and if thoſe loweſt down continue running, whilſt the above are dry, it is a ſure ſign that all the different outlets are connected with and proceed from the ſame ſpring; and along the line of this under one ſhould the drain be directed, which, if properly executed, all thoſe above will continue dry. This is called the main-ſpring, and all the reſt, overflowings of it. The reverſe having been formerly uſed, only carried off the overflowings. But it frequently happens that the uppermoſt (if the ſtrongeſt outlets) are the main-ſprings, and thoſe below only leakages; therefore caution is neceſſary.

Page 27. Where a drain carried on a level is in ſome places below the ſprings, make little drains up to them.

Page 28. In a high porous-bank, with ſprings down the two ſides, drain down the middle from the main-ſpring to a brook at the bottom, and bore with augre holes.

Page 47. In draining a hill, compoſed of alternate beds of rock and clay, make different drains acroſs, at different heights, through the wet ground, to communicate with one from the upper wet ground.

Page 71. Drainage of ſoils, porous above, and retentive below, ſeems to be done by a large drain, in the moſt convenient place, and clearing the furs well, to ſerve in place of ſmaller ones.

Page 167. On ſheep-paſture; a very ſimple method of carrying off ſurface-water, by means of a ſtrong common plough, may be effected in this manner: After turning up furrows through the hollow parts of the field, where the water is apt to ſtagnate, let a man with a ſpade pair off the looſe ſoil, leaving the inverted ſod, or

gradually

graſſy ſide, about 3 inches thick. This done, let him turn over the ſod into the furrow, graſs-ſide up. By this, a canal of 3 or 4 inches will be left in the bottom of the furrow, ſufficient to diſcharge a conſiderable quantity of water, which will readily ſubſide into it.

SCOTUS.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Query as to taking the Tar out of Wool.*

SIR,

IN Mr Naeſmith's ſurvey of the ſheep-counties of Scotland, and report as to the ſtate of ſheep and wool, he mentions, that, at Galaſhiels, they have a method of taking the tar out of the ſalved or ſmeared wool, but he does not ſay how it is done. This *recipe*, in my opinion, would have been of more general uſe, if he had given it, than all his report. If you, or any of your correſpondents, know it, it would be of public utility to communicate it. I have indeed heard of a recipe, but it is from uncertain authority, and I ſomewhat doubt of its permanent efficacy.

A———N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Emigration, and the Means of preventing it.*

SIR,

As a ſpirit of emigration to America is beginning to ſhow itſelf, I think it a duty to the public to point out by what means the poorer and more ignorant were formerly kidnapped, or trepanned into it, and what way they were afterwards uſed.

Every thing ſpecious was held out to thoſe who would go to America, by perſons intereſted to get as many to emigrate as poſſible: they were inveigled into a contract, or indenture, in the Engliſh form, ſufficiently binding and actionable by the laws of America; the terms of which were, that if they paid a certain ſum on landing, the indenture was void. It was, however, taken care of they ſhould be perſons who were in no danger of paying that ſum: If they did not, they were to ſerve the perſon they indented with, or his aſſigns, for a certain number of years. The indenture was very plauſibly worded, to prevent ſuſpicion; and every legal form obſerved. Upon their landing in America, however, and not paying the ſums mentioned in the indentures, they were

were driven, like as many Scots or Iriſh bullocks, to market, and ſold, like ſlaves, to the higheſt bidder, for the time mentioned in the indentures. What became of them afterwards, God only knows: The poor and the oppreſſed have no biographers. But as the perſons who carried them out were not obliged to account for them to any perſon here, they muſt, at the expiry of the term, have been much in the mercy of their oppreſſors. Now that ſlaves from Africa give L. 80 a head, it is clear, this kidnapping of white people, in the Highlands of Scotland, and in Ireland, will be practiſed with avidity. I am not clear, however, but that a perſon ſeducing away Britiſh ſubjects might be proſecuted, or obliged to deſiſt, and bound over to his good behaviour, as, by the laws of God and of nature, the ſtealing and ſelling the ſubjects of any ſtate is highly puniſhable. Thus, by the Jewiſh law:—"He that ſteal-"eth a man, and ſelleth him, or if he be found in his hand, ſhall "ſurely be put to death *." So, likewiſe in the civil law (which, let it be obſerved, is held to be the law of Scotland, where our own is deficient), the offence *of ſpiriting away* and ſtealing men and children, which was called *plagium*, and the offenders, *plagiarii*, was puniſhed with death; *Tit.* 48. 15. 1. This (ſays Judge Blackſtone) † is unqueſtionably a very heinous crime, as it robs the king of his ſubjects, baniſhes a man from his country, and may, in its conſequences, be productive of the moſt cruel and diſagreeable hardſhips; and therefore the common law of England has puniſhed it with fine, impriſonment, and pillory. On the other hand, no ſuch contract can be actionable here againſt the perſon engaging to emigrate, becauſe it is founded on fraud, or dole, a contrivance or machination to deceive; which is a ſufficient defence. At any rate, it is every perſon's duty, who either loves his country, or has any humanity, to point out to thoſe, who are in danger of emigration, the bad ſucceſs they may lay their account to meet with.

A great deal of excellent poetry has been compoſed, to prove that the opulent proprietors building fine houſes, and making beautiful policies, ſetting large farms, and introducing better farm-management, have cauſed emigration. This I, in plain proſe, very much doubt: and if I had the ſame poetical talents, I could give a deſcription of many fine new villages, almoſt entirely erected within theſe 30 years, by perſons fond of building fine houſes, &c. for themſelves; in which a court-houſe, without attornies,—a cotton-mill,—a church, where there was none before,—an academy,—a daily poſt and a coffee-room, would make no deſpicable figure: In addition to all which, labour for every perſon who inclined

* Exodus xxi. 16. † B. iv. c. 15. § 1.

clined to work. Indeed, from obſervation I have ever found, that, where a rich man fixed his reſidence, there was immediately a greater number of houſes near * it, than were on the ſame ground before this happened. The gardener had a wife, as had alſo the herdſman and ploughman; it was not convenient to want a ſmith and a joiner for any length of time, thoſe had families. One reaſon, or another, ſoon occaſioned a number of cottagers, who made part of their living from the ſuperfluities of their wealthy landlord, as there was always ſomething to do, of one kind or another. To pull down a wall, or to build one;—to dig a pond, or to fill up an old one;—no matter what, it created work, it gave bread to the induſtrious. This could not cauſe emigration. The fact is, one of the beſt methods of preventing it is, the landholders to improve their lands. Caſes have been known of ſelling half a large eſtate, and, by improving the remainder, keeping up the rental. One of the greateſt improvers in the kingdom, whenever he finds a piece of land gives little rent, he ſets a number of perſons to work in improving it, at his own expence, and, in a few years, generally makes it worth three or four times the rent, for a permanency. In fact, there are three unqueſtionable principles in improvement of land. 1. Land cannot be improved without induſtry. 2. The earth will always be productive, in proportion to the induſtry beſtowed upon it. From whence a 3d is deducible, that every place may ſupport its inhabitants, if they are induſtrious, and that induſtry prudently directed.

Another method of preventing emigration is, to encourage manufactures. To few villages will do no good, unleſs work is alſo found for the inhabitants. There are already a great many carding-machines; let the proprietors aſſiſt the perſons concerned in theſe in building; let him get ſome ſpinning-machines and dyers collected: Here is a woollen manufactory at once. If theſe perſons cannot afford the expence of the neceſſary machinery, let the landlord give it *in ſteelbow*—an antiquated farming term, for receiving ſo much at entry, and leaving the ſame, or a like quantity, at removing. Let another place engage in another branch; a cotton-mill, for example; a ſeaport in fiſhery, and ſo on. Give encouragement to a few individuals, who are manufacturers at firſt, and to a joiner, a ſmith, a dealer in groceries;—one thing leads to another. People collect; money is brought into the country; and emigration knocked in the head. The conſequence alſo is, that all theſe people want land, for "their baſket and their ſtore, *kail and po-*"*tatoes* †;" and for their cows, that they may have milk, for which

* The Deſerted Village, and the Emigrant.

† Burns.

which they can well afford to pay. Thus the induſtrious are provided for, and the rich increaſe their gains; every cauſe for emigration to other countries is removed, and the proſperity of the country advanced.

ANTIPLAGIARIUS.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Anſwers to Queries on Vegetation.*

SIR,

IN the 11th Number of your very uſeful publication, you ſubmit a ſet of queries on vegetation to your readers and correſpondents, and ſolicit anſwers to the important queſtions put. As I am a ſincere friend to every agricultural and horticultural purſuit, I have ventured to offer anſwers to moſt of them, at leaſt ſuch as I have had occaſion to turn my mind upon, in the courſe of practice.

I humbly ſubmit them to your diſpoſal, if you deem them worthy of a place in your magazine; and am, Sir, yours, &c.

*Aug.* 28. 1802. W. N.

## I. *Concerning the Earth.*

Anſ. to Query 1. Supporting them in a proper poſition; receiving, retaining, or communicating moiſture, and other matter, for their nouriſhment; receiving and reflecting the rays of the ſun, dews, and exhalations; thereby forwarding their growth and perfection.

2. Anſwered above.

3. Moſt certainly. I do not know any plant that will not grow in different ſoils by conſtraint; but none will thrive in a ſuperlative degree, except in that which is peculiarly adapted to its nature.

4. By proper cultivation of the given ſoil, I think not. Even irony till, which is thought to be the moſt inimical of any to vegetation, can, by proper management, be made productive of uſeful plants.

5. Yes; generally thoſe that are termed ſucculent, as the cactus and euphorbia, in an exotic ſtate; and certainly every plant in an indigenous ſtate, as the heath, the juniper, the fox-glove, &c.

6. Becauſe certain plants exhauſt the ſoil faſter and more than others, and that one plant will thrive, where another only exiſted.

7. Nutritive matter, moiſture, &c.

8. Calcareous earth, as lime, chalk, or marl; clay and ſand; in

in this proportion, or nearly: clay, $\frac{4}{9}$; ſand, $\frac{3}{9}$; calcareous matter, $\frac{2}{9}$: judiciouſly manured with dung, or dead vegetable matter.

11. Certainly.

12. Adding a ſufficient quantity of adhefive matter, if too porous.

13. Moſt generally; but there may be ſome pernicious metallic ſubſtance alſo in the ſoil, and which may co-operate in cauſing ſterility.

14. When new digged or ploughed, if in a moderately dry ſtate.

15. In a very great meaſure, if not buried too deep.

16. Not altogether, but partly

17. Expoſing it to the ſun's rays in part, by throwing it into a large lengthened heap whereby it is alſo partly ſhaded, and turning it over once in two or three months, will ſooner reſtore it to fertility than any other proceſs, excluſively of adding freſh matter. The oftener the ſurface is encruſted with froſt, and the freer it is kept of weeds, will be the more aiding to this deſirable purpoſe.

18. Yes; becauſe otherwiſe the ſeeds of many annual and biennial plants are found to degenerate.

19. Soil of a free open texture, and moderately rich. Becauſe all ſeeds vegetate, and all plants ſtrike root beſt in a lightiſh ſoil, although by nature they may require a different kind afterwards to bring them to maturity.

## II. *Concerning the Air.*

Anſ. to Queſ. 1. An effect ſimilar to that it has on animals, inflation and reſpiration. Alſo, of conveying, or rather containing, part of their food, which it depoſits in the ſoil, to be imbibed by the roots; and part it conveys into their ſyſtem by means of the pores in the bark, leaves, &c.

2. I believe many plants would live, and even thrive, in air that might be fatal to moſt animals; but I am convinced that pure, or at leaſt what we term wholeſome air, is eſſential to the production of wholeſome fruits, pulſe, and grain.

4. Not the whole, part only; that is, plants in general. For, in contradiction to any hypotheſis that I know of, I have to ſtate, that I witneſſed an aloe live for upwards of ſeven years in a ſtate of ſuſpenſion between heaven and earth, without a particle of ſoil about its roots, and without any viſible ſigns of decay or mutability. Its ſituation was ſuch, however, that it was equally a ſtranger to rain, froſt, and the rays of the ſun.

5. I think it does. The nitrous acid of the air, being imbibed by the fallow ſoil, is of infinite advantage in reducing dungs, ei-

ther then or afterwards depoſited in it, into that ſtate of mucilage allowed to be the pabulum, or eſſential food of plants.

6. Partly both ways; but probably the ſoil is alſo benefited by the action of the air, as above ſtated, on account that, in the culture of theſe crops, it is frequently ſtirred and expoſed to the elements.

7. I ſhould think they do.—See anſwer to query 1. of this head.

8. To the firſt clauſe I have to anſwer, certainly; but I think the ſecond clauſe by no means explicit. If it has been *found to anſwer* in France, why put the queſtion in Britain? or, why was it not ſtated whether the trees were abſolutely planted in heaps of ſtones, without any kind of ſoil, or if heaps of ſtones were merely laid round their ſtems on the ſurface of the earth? But I am inclined to think this too much of a *hearſay* ſtory. *It is ſaid to have been ſucceſsfully tried in France.* Many wonderful things favour of France!

9. In freſh weather, every day, leſs or more; in ſunſhine, from about nine in the morning to five in the evening, leſs or more, according to the ſeaſon of the year. Even in the time of ſevere froſt, if bright ſunſhine, a little air muſt be admitted, and in ſmaller or greater quantity, according to the hardineſs or tenderneſs of the plants in queſtion. Air ought likewiſe to be admitted and taken off by degrees, *i. e.* the full quantity for the day ſhould not be given in the morning; perhaps only one half or a third, increaſing as the ſun advances in the horizon; taking it off in like manner as the ſun retreats in the afternoon, always obſerving to ſhut up ſeveral hours before ſunſet.

10. Languid, and ultimately periſh.

11. By no means.

12. There at leaſt would *ſeem* to be an antipathy between the artichoke and other plants, as weeds, if ſown ever ſo thick, will not grow *under* them, although they will thrive very well *beſide* them; but perhaps this is owing more to the ſhade, than any inimical quality in the leaves of this plant. It has been *ſaid* that wheat will not thrive within I don't know how many hundred yards of barberry, and nothing more ridiculous could poſſibly have been *ſaid*; for I can aver, for one, that I have repeatedly ſeen as fine wheat as ever grew, in a field incloſed on all ſides with a barberry hedge, in a wild, unclipt, ſhrubby ſtate, and which produced flowers and fruit in abundance. I am as little inclined to think there is ſympathy between plants, except ſuch as a favourite ſoil and ſituation *ſeemingly* begets between ſuch plants as happen to affect one and the ſame. But it might be aſked, Have plants a will, a deſire, or inclination,

clination, to be placed by their friends or lovers; or to be removed to a diſtance from their enemies?

13. Many plants grow well under the ſhade of others; but none grow ſo well as if unſhaded, and in their nativity.

14. Baneful; frequently diſſolution, if ſtruck with the material fire or lightning. But, on the other hand, the growth of many plants is much promoted by the ſultry moiſt heat, frequently attendant on, or following a thunder-ſtorm. The electrical fluid is alſo *known* to be aiding to the growth of plants, by real experiment; that is, by the circumambient air, or what may be called the immediate atmoſphere of the plant, being charged in a moderate degree by the wheel, for ſeveral days together, vegetation has been obſerved to increaſe in a very conſiderable degree.

15. If they are ſituated at a conſiderable diſtance from the ſea, and the ſea-air is mixed with freſh air before it comes into contact with the *lungs* of the plants, or the ſoil wherein they grow, it is attended with little bad, perhaps good, effect; but if they are ſituated on the brink of the ocean, the effects are ſuch, that they are ſtunted, hidebound, and all their juices are contaminated by its baneful influence and aſtringency, more eſpecially while the wind blows from thence.

## III. *Concerning Water.*

Anſ. to Queſ. 1. Nouriſhing the root, increaſing the quantity of ſap, and refreſhing the foliage Water is alſo probably the chief vehicle by which the eſſence of dungs, and other manures, is conveyed into their ſyſtem.

2. Soft, that is, river, rain, or waters that have been expoſed to the rays of the ſun a conſiderable time before application, are favourable; and hard, or waters that are impregnated with metallic ſubſtances, are injurious to vegetation.

3. Very bad for either, if perſiſted in; and more perceptibly ſo, at firſt, on young than old plants.

5. Mornings and evenings, before and after the ſun's heat is violent, becauſe, otherwiſe, it would be rendered of leſs beneficial effect, owing to ſudden exhalation.

6. As long as a tree or plant (*i. e.* the ſtem, branches, or haulm) can be ſaid to be in life, its ſap undoubtedly flows in a greater or leſs degree. For inſtance, cut any part of a vine, birch, ſycamore, oak, &c. in the dead of winter, the juices will inſtantly flow at the wound, although not ſo copiouſly as in the early part of ſpring and ſummer. The circulation is alſo either promoted or retarded *much* by the influence of the climate.

7. Conſiderable quantities both ways.

8. The effect of dew is nearly ſimilar to that of rain, only in

leſs proportion, it nourishes the roots, and refreſhes the foliage in a very conſiderable degree, if not ſuddenly evaporated by the heat of the ſun. Cannot ſay to *what extent* it is favourable, much depending both on the nature of the plant and the ſeaſon.

## IV. *Concerning Light and Heat.*

Anſ. to Queſ. 1. Giving the natural colour to foliage, flowers, and fruits; making the ſap flow and circulate; increaſing the farinacious matter in grain; and increaſing the ſaccharine matter in, and enhancing the flavour of fruits in general.

2. Yes; but excepting the fungi tribe, I do not know of any whoſe flowers and fruit have been produced in perfection.

3. Moſt certainly.

4. Surely, inaſmuch as grain, raiſed in warm or improved climates, is more rich and productive of *ſpirit*, than that raiſed in cold or unimproved ſituations.

5. It is neceſſary to keep *many* kinds of cuttings *almoſt* in the dark, until they have taken root; and *all* kinds are the better for being ſhaded from the ſtrong rays of the ſun till then.

6. Not always; they are equally liable to periſh becauſe of wet, drought, or froſt, according to their natures.

7. Certainly.

8. In a very conſiderable degree of degradation.

9. Generally more mild, but alſo ſometimes more pernicious. If the ſteam is confined in a flue the ſame as ſmoke, the effect is the ſame. If it is ſuffered to diffuſe, it is ſalutary in a dry, and pernicious in a moiſt climate.

10. If *properly* managed, hot walls have much leſs effect in promoting the growth, than in perfecting the annual ſhoots, of plants placed againſt them; as, by the time artificial heat is applied (which ſhould not be before the middle of July), their vegetative powers for the ſeaſon will be nearly exhauſted. Fire-heat is with propriety applied to flued walls which have no glaſs covering in the autumn, in order to aid nature, in a cold climate, in ripening the ſhoots and buds deſtined to produce the ſucceeding crop of fruit. But the attempt to force fruits on theſe walls in the ſpring has not been generally attended with ſucceſs.

By painting part of a brick-wall black, againſt which one wing of a peach-tree was nailed, and letting that part, againſt which the other wing was nailed, remain in its natural ſtate or colour, it has been aſcertained, that black does very conſiderably abſorb heat, as the fruit on the painted part were ripe ten days ſooner than on the other.

11. I think the Danes extremely right in this practice; and I am convinced

convinced it would be very beneficial in this, and all cold climates. The cauſe of the failure of our fruit-crops is more generally owing to bad weather *coming on the back of good* in the ſpring-time, than any thing elſe; and if we could keep back vegetation by the above proceſs, or any other, to a better and more ſettled ſeaſon, it would be an important improvement.

12. Yes; and every plant will bend to the light, whatever angle of the horizon it is admitted from. If the rays of the ſun are admitted, it will be the more obedient.

13. Yes; with reſpect to trees placed againſt a wall. With reſpect to trees ſtanding freely expoſed, I do not think they are.

14. I cannot poſitively ſay of all plants; though, judging by analogy, I believe moſt do grow more in the night than in the day, in ſummer particularly. I have found, that vines in a hot-houſe grow moſt in the night, from about the 1ſt of April to September.

15. Yes; but by no means ſo luxuriantly as if protected; nor will the plants continue to flouriſh *as well* for a ſeries of years. Indeed, neither could reaſonably be expected conſidering that, in this caſe, one part of the plant would be placed, as it were, in Greenland, and the other in the Indies.

## V. *Concerning Manures, or dead organized Matter.*

Anſ. to Queſ 1. By correcting tenacity and poroſity in the ſoil, exciting its fermentation, communicating nutritive matter, and affording nouriſhment to the roots of plants, manures greatly promote vegetation and their perfection.

2. *Firſt*, Vegetable earth of decayed tree-leaves, and of decayed vegetables, of different kinds, mixed together, I have ever found mild, nutritive, and of the moſt ſalutary effect: nor have I ever found that I had applied too much. *Secondly*, Stable-dung, on all heavy loams and cold ſoils, not too much fermented, I have found of good, and on light dry ſoils, unleſs pretty much fermented, of bad effect. *Thirdly*, Cow and hog-dung, on light dry ſoils, I have found to be ſalutary, and the contrary on cold and wet ones. *Fourthly*, Sheep and deers' dung, applied in moderate quantity, has a good effect on all loams, eſpecially thoſe that are tenacious and wet. *Fifthly*, Pigeon-dung, at leaſt a year old, mixed in equal quantity with vegetable mould, I have found of the moſt happy effect, when diſcreetly applied to heavy land, and being buried only two or three inches. *Sixthly*, I have found whin and fern aſhes, mixed with a little good earth, an excellent top-dreſſing to graſs-land of a ſtiff wet nature.—*Seventhly*, A compoſt of coal aſhes, ſoot, pigeon-dung, and ſea-gravel, wherein was a conſiderable quantity of ſhells, I have found of

of infinite advantage to a very tenacious tilly clay. *Eighthly*, I have always found ſea-weeds (or ware) a good manure, either as a *ſimple*, or being compounded with dung and earth. *Ninthly*, I have ſeen a very cold, wet, back lying, clayey field, much fertilized by one dreſſing with the rubbiſh of ſome brick-kilns, which was freely applied, and of which coal-aſhes made a conſiderable part.

3. Much muſt depend on circumſtances; ſometimes in fallowing, but more generally at the time of ſowing or planting; and always when the ground is in a moderately moiſt ſtate.

4. All theſe modes are proper, according to exiſting circumſtances, and the nature of the crop to be manured.

5. By all theſe means, in conjunction with thoſe of retaining moiſture in dry, and expelling it in wet ſoils; alſo, by correcting crudity in, and adding fertility to ſterile ones.

6. Certainly.

7. Compoſt manure is moſt generally to be preferred, particularly if any calcareous matter is to be applied, as lime, marl, &c.

8. A very proper mode of application.

9. By throwing the leaves and haulm of all vegetables into a common heap, and letting them remain till well rotted, then mixing them with lime, aſhes, ſoot, dung, &c. or in the proceſs of collecting them, and watering the whole frequently with the drainings of a dunghill: By mixing the ſcourings of ditches, pond-mud, ſcrapings of roads and pavements, &c. as above: And, by cleaning out the furrows of all paſture-lands every ſecond or third year, mixing it with lime, &c. and applying it as a top-dreſſing.

10. Thoſe of a cool moiſt nature, as vegetable earth, pond-mud, cow-dung, &c. anſwer beſt for dry and abſorbent ſoils; and thoſe of a hot, and more generous nature, as ſtable-dung, pigeon-dung, ſoot, aſhes, &c. for cold wet ſoils.

11. If they have not undergone a proper fermentation, their effects are, giving a rank and diſagreeable flavour to fruits and herbage; and, if an immoderate quantity is applied, of producing a conſiderable degree of unwholeſomeneſs, and tainting the juices of many plants.

## VI. *Concerning Culture.*

Anſ. to Queſ. 1. Of producing health and vigour, in a very conſpicuous degree, both on root and branch.

2. Of courſe, yes.

3. Certainly.

4. It is more beneficial for the trees, that an under crop be cultivated amongſt them, than that the ground lie in graſs, weeds, &c.; but, were the ground properly cultivated, *without* an under-

crop,

crop, it would be ſtill more ſo. Potatoes, cabbages, &c. may, with propriety, be cultivated in young tree-plantations, for four or five years, or till the roots of the trees begin to come into contact with one another, but not longer; becauſe, if perſiſted in after that time, the extreme fibrils, which are the purveyors of the plant, might be materially injured

5. *Firſt*, Of courſe, yes. *Secondly*, The ſoil is alſo much benefited by this ſpecies of fallow.

6. By any proceſs of ploughing, and harrowing, that I have yet witneſſed, no.

7. Much muſt depend on the quality and the ſituation of the land, and the ſtate of labour; the difference of expence may be from 20 to 30 ſhillings per acre

8. I believe it would, in many caſes; and I am convinced, that, in all caſes where the depth of *good* ſoil is greater, or *beyond the reach* of the plough, trenching with the ſpade, once in four or five years, would anſwer the expectations of the moſt ſanguine.

## VII. *Concerning Sulſtances in the Earth, injurious to Vegetation.*

Anſ. to Queſ. 1. Metallic, ſulphureous, aluminous, and all aſtringent ſubſtances are inimical to vegetation; and ſoils wherein theſe are found, are more or leſs fertile, according to the quantity of metal, &c. they contain. Their effects on the tender roots of plants, in corroding and cankering them, are ſuch as frequently occaſion decay, ſicklineſs, and diſſolution.

2. Pulverization, expoſition to the elements, and the addition of diſſolvent matter, as lime, chalk, &c.

3. *Firſt*, Yes. *Secondly*, By judicious draining, and afterwards treating it, as above, as the caſe may require. In many caſes, alſo, it is neceſſary, and in all caſes proper, to add adheſive and more ponderous matter in the cultivation of peat-moſs.

4. A mixture of peat-earth, purged of its noxious qualities, with loam, &c. is found generally to ſuit their nature, as more immediately reſembling the ſoil of their nativity. There are many European, and even Britiſh plants, which alſo thrive beſt in this kind of ſoil; and there are many American and other foreign plants that do not.

5. When trees are obſerved to decay, from their roots having reached a cankering metallic ſtratum, I think it is then time to ſtub them up, as I have not been yet able to diſcover a cure; and I had rather ſee no tree than ſee a ſickly one.

VIII.

## VIII. *Of Vermin, noxious to Vegetation.*

Anſ. to Queſ. 1. The grub, ſlug, maggot, and mole.

2 The grub, ſlug, and maggot, may be deſtroyed by the application of lime, ſoot, ſnuff and ſulphur mixed, tobacco-water, and by rolling the ground late in the evening, or early in the morning. The mole, by any of the common methods of trapping, or by terriers.

3. Ethereal fire! and the means are ſupernatural. But obſerve, I diſtinguiſh between *blight* and *ſmut*; and, on ſome other occaſion, may offer my ideas more at length on this ſubject.

4. I cannot ſuppoſe that bees are unfavourable to the growth of any plant; and I know that they are very uſeful in diſperſing the farrina, in all hermaphrodite flowers, and tranſporting it from male to female, on androgineous plants placed in hot-houſes, melon-frames, &c and on which the wind cannot act, in facilitating that object, with the ſame effect as in the open air.

5. Dry, hot ſeaſons, are generally moſt productive of the acarus, cocus, maggot, ant, &c.; and wet ones of the grub, ſlug, ſnails, &c. It might be difficult to ſay what precautions are to be taken againſt them; but every one who has his own intereſt at heart ought to be indefatigable in repelling their attacks.

6. I don't know that the ſmell of any plant, in its natural growing ſtate, is *deſtructive* of inſects; but there are ſeveral plants which are, when dried and reduced to powder, or when burnt near to certain inſects; and theſe are, tobacco, hemlock, aſaphædita, rue, wormwood, henbane, &c.

7. The pine-apple brought that ſpecies of inſect, called the pine-bug, which, however, I have never ſeen on any other plant, although placed in its immediate vicinity. I believe, another ſpecies of that inſect, called the brown-ſcale, or orange-bug, was brought with the orange-tree; but it is now found on many other ſtove and green-houſe plants. I have never ſeen any of them on native plants.

8. In very many inſtances; for ſeveral kinds of inſects, I have found fumigation effectual, particularly for all kinds of the aphis.

9. It will deſtroy ſome tender kinds, as the aphis, thrips, &c. but the proceſs is eaſier by a fumigation of tobacco, and alſo more certain. On the whole, it ſeems rather to retard the progreſs of, than deſtroy inſects; and it produces unſalutary effects on vegetation by its aſtringency, if too freely applied. I have never, however, tried it for inſects in the ſoil.

10. In ſo far as they diſturb the roots of eſtabliſhed, and diſplace

thoſe

thoſe of infant plants. They may be deſtroyed by trapping, &c. See anſwer to queſtion 1. of this head.

IX. *On the Improvement of Plants, by introducing new Varieties.*

Anſ. to Queſ. 1. Yes; by ſowing them in a richer and better prepared ſoil, and paying all due attention in the culture.

2. Anſwered above.

3. Yes; by high cultivation.

4. Yes; by ſupplying them plentifully with water while ſwelling, and ſparingly while ripening.

5. By keeping the ſoil clear of weeds and all noxious matter, ſtirring the ſurface frequently, expoſing them freely to the ſun and air, and defending them from wet while ripening.

NOTE.

THE Conductor gratefully acknowledges the obligation conferred on him by the author of the above very ſenſible and judicious anſwers to the queries on vegetation, &c. inſerted in the third number of laſt volume; and begs leave to add, that it will afford him much ſatisfaction to receive further information reſpecting the cauſe of the blight in wheat, and other grains, and the beſt means of guarding againſt it, together with other matters noticed in anſwer to the third query of the eighth claſs; theſe ſubjects having occaſioned much diſcuſſion among practical agriculturaliſts.

The Conductor has ſeen anſwers to the queries in the ninth volume of the Bath papers; and with pleaſure gives a preference to thoſe of his intelligent correſpondent. In fact, they appear to be founded upon the ſolid baſis of obſervation and experience, and muſt be peruſed by ſcientific agriculturaliſts with ſingular ſatisfaction.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Anſwers to Queries concerning the Sowing of Wheat in the Spring Months, with Queries on the Working of Oxen.*

SIR,

IF better anſwers are not ſent to the queries offered by your correſpondent ALFRED, in laſt number, concerning the ſowing of wheat in the ſpring ſeaſon, pleaſe accept of the following.

Q. 1. Whether is there any variety of wheat peculiarly adapted for ſowing in the ſpring ſeaſon?—Anſ. A kind of wheat, brought, I believe, from Dantzick, was introduced into this coun-

try about twenty years ago, which was ſaid to ripen earlier than our uſual varieties of that grain. This kind of wheat was ſoon given up; and, for a great many years back, none but the varieties commonly cultivated have been ſown in the ſpring ſeaſon. Any of theſe will do equally well on rich grounds as if ſown in the autumn or winter months, providing a dry ſeed-time can be got, and the ſucceeding ſummer proves warm and temperate. The writer of this anſwer has repeatedly reaped crops of wheat ſown in the month of March, of excellent quality; but the goodneſs of the crop was conſtantly regulated by the circumſtances already mentioned.

Q. 2. What is the quantity uſually ſown per acre at that time?

Anſ. It is difficult to ſtate the quantity *uſually* ſown, becauſe this is too often regulated by opinions arbitrary and capricious; but I am clear that a great deal more ſeed is neceſſary than in the autumnal or early winter months. My reaſon for thinking thick ſowing neceſſary at the period under inquiry proceeds from a belief that every moment conſumed by the plants, in ſtooling or tillering, is ſo much loſt time in their progreſs to maturity: hence the propriety of enabling them to puſh away vigorouſly at the ſtarting-poſt. Perhaps eighteen pecks, Linlithgow meaſure, are neceſſary for ſeeding a Scotch acre, in the months of February or March.

Q. 3. Is there any other preparation neceſſary than what is commonly beſtowed? By preparation I mean pickling the ſeed.

Anſ. The like preparation is required, and no other, for wheat ſown in any ſeaſon of the year; that is to ſay, the ſeed ought to be well ſprinkled or wetted with ſtale urine, which is the moſt certain of all the pickles in uſe, and afterwards ſufficiently dried with hot-lime. If this operation is carefully executed, I venture to maintain, that the object of pickling will be completely gained.

Having thus anſwered the three queries put by Alfred, I am entitled to requeſt he would favour me with anſwers to the like number of queries, which occurred upon reading that part of his letter reſpecting the working of oxen.

Query 1. As Alfred works oxen in pairs, pray what extent of ground does a pair plough per day with him; or rather, which will come to the point at once, how many acres will they plough per annum, the ordinary work of the farm being included? If they are employed to harrow, he will be ſo kind as ſtate the quantity uſually gone over at a yoking?

Alfred mentions that he keeps two ſets of oxen, but that they go only one yoking each per day, becauſe he has not occaſion for two cattle-ploughs.

Query 2. Be ſo good as explain where the neceſſity lies of keeping

ing two sets, if it be true that "each pair might very well "work two yokings, the same as horses." As the adversaries of the ox-system will undoubtedly say, that the statement presented corroborates what they have uniformly maintained, viz. That oxen cannot be wrought so many hours in a day as horses, and that double numbers, at least, are necessary to carry on the like extent of farm-labour, I hope that Alfred will be very particular in the answer to this query.

Q. 3. As a pair of horses are capable of being wrought every day the weather permits field-labour to be executed, and in the corn-districts are actually employed from five to six hours per day, for five months of the year, and from nine to ten hours per day, during the remaining seven months, will Alfred be so kind as to say whether oxen are capable of undergoing so much fatigue? or rather, whether there is a single farmer in the island that uses them in that manner?

As Alfred professes his willingness to furnish additional information, I trust, that an answer, in course, to the above plain and simple questions, will not be wanting. I am,

Yours, &c.

MAGO.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Observations on frosted Oats, and a Remedy pointed out for rendering them Nutritious.*

SIR,

As no subject occupies the attention of the present age more than that of *agriculture*, and none surely can be of greater utility to our present condition, I venture, through the channel of the Farmer's Magazine, an observation or two, which, I trust, will not perhaps be any way inconsistent with the design of its publication. I mean to state a few facts and circumstances, and leave it to others more capable to found upon them such theory, or adopt such practice, as may seem deducible therefrom.

The general idea among the farmers in the Lothians, and I may say in every level country, is, that, in case of such frosts as occurred during the last harvest, all the oats in the high lands must be rendered useless for sowing in the approaching spring; and the higher the situation, the worse. This, in fact, is a wrong idea; for it always happens, that though the corn in the valleys, in the hilly countries, at a distance from the sea, may suffer by these early frosts, the crops on the summit, and, to a certain elevation, on the sides of each hill, remain perfectly safe; and so certain is the fact,

that it is the conſtant practice of ſome farmers, in hilly countries, to plant their potatoes, and any delicate crop, on the greateſt altitude their ſituation can afford.

I am indeed no philoſopher, and leave the inveſtigation of the cauſe of ſuch a phenomenon to thoſe who are capable of it. But it appears that the height to which the froſt extends on the ſides of the mountains is exactly conformable to the elevation of the hoar-froſt, or rhind, which floats all round the baſis of the hills. This hoar-froſt, however pernicious to vegetation, when ſeen from a high hill-top in a September morning, affords a moſt enchanting proſpect. The effulgent rays of the ſun, to which it very ſoon yields, makes this exhalation appear like a boundleſs ocean adorned with a rich and endleſs variety of green iſlands, as it were, emerging from the waters. Every vegetable, loaded with pearly drops, joins in heightening the luſtre of the ſun-beams, and their own natural verdure; while the ice, diſſolving on every tree and ſhrub, *diſtils like the dew on the tender graſs*. If we add to this ſcene the melody of the groves, where the feathered ſongſters warble forth their unaffected notes from every ſpray, it will finiſh the picture of a rural ſcene, which cannot be exceeded.

This kind of froſt, which ariſes from the lakes, marſhes, and moiſture of the ſurface, ſeldom aſcends to a great height; and it would ſeem, that the later and more intenſe froſts deſcend from the atmoſphere, and are more ſevere on the mountain-tops, where their effects begin. I had ſome accidental communications on this ſubject with a very active and intelligent farmer, on Galla-water, who declares, that what I have above ſtated is perfectly conſiſtent with his knowledge and practice; that he ſeldom can ſave his potatoes without the above-mentioned expedient; and that his oats, in ſuch a ſituation, will in general be found fit for ſeed. No circumſtance acts more forcibly againſt the comfort of the poor than that alarm which cauſes a very general demand for ſeed-oats upon the low-lands, and this ſubject is therefore ſurely worthy the attention of the hill-farmers. It is true, the oats they do not uſe for ſeed muſt come to market in the form of meal, but they muſt be but a poor ſubſtitute for the fine ones they thus withdraw from that market.

It is certainly not the intereſt of a Lothian farmer to *harp upon this ſtring*; as every circumſtance, which tends to create a demand for ſeed-corn to the later counties, muſt be *directly* for his intereſt. But he has narrow and ſelfiſh views, who is incapable of deploring the ſufferings of a whole community, or who can rejoice at the preponderance of his own intereſt, when thrown into the oppoſite ſcale?

The ſecond obſervation I would make (and it is equally ſupported

ported by practice) is, that even when oats are damaged by froſt, ſo as to be unfit for any purpoſe, they can, by means of certain ſimple correctives, be rendered good and wholeſome food for horſes.

The farmer, above alluded to, has been long in the practice of feeding horſes with froſted oats; which, without having their bad qualities corrected, are always found extremely prejudicial to the health of that valuable animal. His method of doing this is, to boil one firlot of oats with half a pound of common ſalt, and four ounces of ſaltpetre, or any quantity with the ſame proportion. This effectually reſtores their nutritive qualities, and renders them perfectly fit for every purpoſe in the way of feeding any animal. By this excellent method, a conſiderable quantity of oats, which were otherwiſe completely uſeleſs, are brought in to ſerve a moſt eſſential and valuable purpoſe, and thereby increaſe, in no inconſiderable degree, the food of the poor.

That the above facts might be fully eſtabliſhed, to the ſatisfaction of all concerned, they have only to aſcertain them by experiments; and, indeed, who can be blamed for diſcrediting ſuch an apparent abſurdity, that, to ſecure vegetables from froſt, it is neceſſary to plant them on the top of a hill? Or, that oats damaged by froſt, can by any means be reſtored to a wholeſome and ſound condition, and rendered fit for the food of animals? The operations of nature, however ſeemingly inconſiſtent with one another, are all connected with fixed cauſes, which are more or leſs difficult to explore. Indeed, there are myſteries in nature which philoſophy cannot elucidate, and ſeeming contradictions which reaſon cannot obviate; but the eſſential part of the above lies within reach of every capacity; for attention and obſervation are the means of diſcovering their truth.

Concerning the origin of potatoe-oats, my correſpondent ſays, they are native ſeeds of South America, imported a few years ago into this country, by a perſon with whom he is well acquainted. This perſon, it ſeems, had curioſity ſufficient to induce him to requeſt of his ſon (I think it was) to hand him occaſionally any plant or ſeed which might be conſidered any way ſingular in its properties: Accordingly, in one package, conſiſting of potatoes, &c. was a ſmall parcel of theſe American oats, about as many as might fill an ordinary ſnuff-box. From this ſmall original importation, and from the circumſtance of their having been in a *potatoe package*, ſprung the oats which now go under that name. He thinks they are already very much mixed or degenerate, and promiſes *to preſent, in Haddington market*, a few bolls of the genuine ones, from the county into which they were firſt brought. It is his opinion, that,

that, in a very short time, their price will be only in proportion to the additional quantity of meal they are capable of producing.

I am aware that the public have a sort of right to expect the author's name in the case of such communications, and even that of his correspondent, which is perhaps still more essential. But the latter I have not obtained the liberty of doing, and as to the former, though I hate to cloke falsehood, it must for the present be

*East Lothian, Jan* 1. 1803. URBANUS.

P. S. If I have in any degree mis-stated the article relative to the origin of potatoe-oats (having received it only in a verbal communication), I hope my informant, or some person equally acquainted with the matter, will kindly correct the mistake in some of your succeeding numbers.

## REMARKS BY THE CONDUCTOR.

WHETHER the history offered by *Urbanus* of the potatoe-oat be correct or incorrect, is a matter of little importance, for the variety so distinguished is universally recognized as the best kind of oats for good soils; but whether they can be sown with equal advantage upon inferior soils, is not so clearly established. There can be no doubt but that their real value above other oats will in a little time be regulated by the extra quantity of meal produced; and we believe that, in all the districts where they are extensively sown, this criterion is already established. We shall be extremely happy to see the parcel of pure seed, which is intended to be shown in Haddington market, though we are not of opinion that those hitherto sown have in any great degree degenerated.

What our correspondent states respecting the consequences of frost to oats in different situations is perfectly correct, and was in substance noticed by our Tweedale reporter in last number. We can bear testimony that frost will not hurt oats, or any kind of grain, if wind prevails about the time when the sun rises, or soon afterwards; though, if carried off by a hot sun, great danger to the plants is the necessary consequence. A southern exposure, in such cases, is always attended with greater danger than a northern one, and the highest situations are less endangered than such as are below them, because the effects of the air are sooner felt in the one situation than in the other.

With respect to the mode of correcting frosted oats, so as they may prove nutritious to horses, we must confess that this is the first time it has reached us, and we have not had occasion, in the course of our experience, to try any such practice. We, however, recommend it to the notice of our readers in those counties where the frost confessedly proved injurious last autumn, and will be glad

glad to learn the reſult of ſuch trials as may be made to aſcertain the fact.

Our correſpondent will excuſe us for changing his ſignature, another gentleman having previouſly foreſtalled the one he had adopted. We ſhall be glad to hear from him often. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Diſeaſes to which young Calves are expoſed.*

SIR,

THERE is a ſubject of the utmoſt conſequence in the preſent ſtate of the country which, while it merits the greateſt attention, I have never yet ſeen diſcuſſed, nor even noticed in your uſeful publication. The ſubject I allude to is, The diſeaſes to which very young calves are liable. When butcher-meat is at ſuch an exorbitant price, and that price is ſaid to ariſe from the ſcarcity of the ſtock, every mean ought to be uſed to increaſe the quantity, in order that the price may be brought within the reach of the general body of the people, which at preſent it is not; and this can only be effected by endeavouring to preſerve as many calves as poſſible, till the deficiencies of 1799 and 1800 are made up.

It is well known in every breeding country, at leaſt it is ſo where I live, that a great many calves die every year of an unknown diſeaſe with which they are infected very ſhortly after their birth. The common name which this diſeaſe receives with us is *the cords*; and while its fatal and widely-extended effects are the ſubject of juſt regret, the diſeaſe itſelf is looked upon as incurable, and no pains are taken to inveſtigate its nature, cauſes, and ſymptoms, and no preſcription ſuggeſted as a cure or preventative. Whatever be its nature, this diſeaſe is exceedingly dangerous, and ſo extremely rapid (terminating frequently in a night's time), that all means of relief are commonly uſeleſs before even it is obſerved.

I do not, by any means, pretend to be qualified to diſcuſs this ſubject in the manner its importance requires: all that I ſhall therefore attempt is to ſtate a few facts which have fallen within my own obſervation, and from theſe to ſuggeſt ſome hints for the conſideration of others of more experience; hoping that experienced breeders, and all others who wiſh well to the intereſt and proſperity of their country, may be induced to take this ſubject into their ſerious conſideration.

Almoſt all calves that I have ſeen, who are ſaid to have died of the cords, appear, when they are opened up, exceedingly red, and the ſmall leaders or ligaments are conſiderably ſwelled, and have ſome

ſome kind of reſemblance to ſtrings paſſing through the internal parts, from which probably the diſeaſe has its name. Every ſymptom indicates a conſiderable degree of plethora, if not a very high degree of inflammation.

I have commonly obſerved that calves are moſt liable to be affected during the firſt days or weeks after they are calved. If they outlive five or ſix weeks, they are ſeldom in any danger.

Calves that ſuck their mothers, I believe it will be found, are not ſo liable to the diſeaſe as thoſe who are fed by the hand.

The greateſt number of calves who fall a ſacrifice to this diſeaſe, if not the whole of them, are thoſe who are cloſe confined to the houſe from their birth, without ever being expoſed to the free open air without doors. It is a well known fact, that calves who are dropt without, and remain in the fields, are in little or no danger. Cows that are laid on to graze for beef frequently turn out to be in calf; and it is no uncommon thing to ſee them drop their calves in the middle of froſt and ſnow, and yet theſe young creatures, if they can only once get to their feet, without being frozen to the ground, are hearty and well. Calves, lambs, and foals, require exerciſe and freſh air, and nature directs them to take a great deal. It is aſtoniſhing to ſee with what force and vigour (particularly the calf), and how long, they will run. I have often beheld them with admiration, while I was in pain for fear of ſome pending miſchief. But this free, unconſtrained, and ſevere exerciſe without doors ſeems to be the very thing that makes them thrive, and to be neceſſary to their very exiſtence.

Such are ſome of the facts relating to this diſorder which have come under my obſervation, and, if they apply generally, they would ſeem to lead us not only to its cauſe, but to its prevention.

The diſorder ſeems to proceed from plethora terminating in ſomething of an inflammatory nature, and to be increaſed, if not occaſioned by confinement, and want of full and free exerciſe in the open air. Whatever plan, then, is adopted which tends to counteract and diminiſh ſuch plethora, and to contribute to ſuch exerciſe, will operate as a preventative to the diſorder. And, with this view, would it not be prudent to turn out calves as ſoon as poſſible after they are calved, and let them run about a few hours every day? But as either the weather, or ſome other circumſtances, may not permit this in every caſe to be done, might it not be adopted as a ſubſtitute, to take a little blood from them every week for a ſhort period of time? I only throw out theſe hints for better information, and will be very glad to ſee the ſubject followed up, through the channel of your magazine, by ſome perſon of more judgment and experience than I can pretend to. I am, &c.

W. D.

NOTE

*Note by the Conductor.*

We have repeatedly noticed a similar disorder to the one described by our correspondent, which proved fatal to calves even when they were not confined. This inclines us to believe, that the remedy he suggests, viz. taking a little blood frequently from them, is the most effectual preventive of the mortality which often prevails among this description of young cattle. To be sure, if they are intended to be fattened speedily, confinement is necessary; but this does not prevent the application of the lancet, which in our opinion is the only effectual remedy.

N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Observations on Tythes.*

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" Let us cut off these legal bars
" Which crush the culture of our fruitful Isle.
" Were they removed, unbounded wealth would flow;
" Our wastes would then with varied produce smile,
" And England soon a second Eden prove."

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Sir,

To superficial minds it often appears surprising, that the art of agriculture, which has been practised, by such a great number of people, from the earliest ages, should not long ere now have attained to something like perfection. A person, however, who reflects coolly upon the subject, will be at no loss to ascertain the causes which have obstructed its progress. He will discover that, besides local and particular obstructions, the very laws of many countries are hostile to improvement; and that to these legal obstacles may be added numerous other impediments flowing from the system of connection anciently established, and in numberless instances still preserved, betwixt the proprietors of the soil and those appointed to cultivate it.

In this part of the island, it is with real pleasure I remark, that improvement is not retarded by legal obstacles, and in few cases by an improper system of connection betwixt landholders and tenants. I wish I could say as much in favour of the agriculture of our southern brethren; but sorry I am that facts will not

warrant me. There, as if it was intended to place the husbandry of both nations upon something like an equal footing, every established abuse is retained with astonishing pertinacity; and the deficiency of our climate, and poverty of our soil, compared with theirs, is more than compensated by the superiority of our system both legal and conventional. I have somewhere read, that till the occupiers of land are entrusted with as much liberty in the management of their affairs as is enjoyed by merchants and manufacturers, it is unnecessary to expect that improvements of any consequence will be made. In North Britain, generally speaking, we are as nearly placed in the favourable state alluded to as circumstances will permit; hence a gradual progressive improvement of the country is regularly going forward; hence the value of landed property is daily increasing; hence the condition of the tenantry is vastly meliorated. I wish, from the bottom of my heart, I could present the same bright and flattering picture of English husbandry; but a regard to truth and justice will not allow me to go so far. Except in a few districts, agriculture has remained stationary for a great number of years; and under a continuance of established systems, the gift of prophecy is not required to foretel that it may languish and go back, but that little advancement will be made.

Since the commencement of the Farmer's Magazine, I must do you the justice to say, that repeated attempts have been made to explain these things in a satisfactory way. Indeed, the leading object of your undertaking appears to me highly praise-worthy. You support a liberal system betwixt proprietors and cultivators of the soil, and have done your part to get abuses entirely removed. The harvest of reform, however, is a tedious business; and long must the seed be sown before the plant can reach maturity. Mankind are very tenacious of systems which have been handed down from their forefathers; and often, from a reverence more to be respected than commended, adhere to them after their inutility is almost universally recognised.

Among other grievances which afflict the cultivators of South Britain, tythes paid to clergymen, or, what is worse, to lay impropriators, are none of the least. The impolicy of this tax (it cannot justly be called by any other name) you have repeatedly pointed out, though I do not remember of a remedy being suggested, either by you, or any of those gentlemen who have corresponded on the subject. Will you permit me to state my opinion as to tythes; and to notice a defence of this obnoxious burthen presented in your last Number?

That tythes are a very ancient burthen upon the proprietors of land, the history of different nations sufficiently proves. It is not my business, at this time, to say one word upon the propriety

priety of this tax, when originally eſtabliſhed. Perhaps it was then neceſſary and expedient, money being a ſcarce article, and payments in kind generally reſorted to, in order that the deficiency of what we now call a circulating medium might be ſupplied. I ſhall therefore confine my enquiry concerning tythes to the period of the Reformation, when the Engliſh ſeparated from the Romiſh church; and this period I reſort to, ſo as the nature of lay-tythes, and the term lay-impropriator, may be more generally underſtood.

When Henry VIII. ſeparated from the Church of Rome, he laid violent hands on the revenues appertaining to abbacies, monaſteries, and other religious houſes in England. Many of theſe religious houſes poſſeſſed lands to a conſiderable extent, and likewiſe received tythes from land in many parts of the country, which were afterwards, at various times, conveyed by that arbitrary monarch to his favourites and dependents. Hence originated lay-tythes, which, from good authority it is believed extend to the fourth part of the Engliſh territory. Hence lay-impropriators are either the deſcendents of thoſe to whom Henry VIII. conveyed the tythes of religious houſes, or perſons who poſſeſs them by right of purchaſe.

If I am not miſtaken, tythes, ſo far from being then viewed as a ſacred right, were, after the ſeparation from Rome, collected in conſequence of an act of the legiſlature ſpecially enacted for that purpoſe. This, I cheerfully concede, gives a juſt and lawful right to collect them, but certainly does not reſtrain the legiſlature from making new laws, either to regulate the collection, or even to commute the tax altogether. I ſupport the abſtract right, becauſe it is agreeable to the laws of the country; but if it can be ſhown that the preſent mode of putting the right in execution is detrimental to the public welfare, then, I apprehend, it naturally follows that the welfare of the public requires ſuch regulations to be made as will annihilate the grievance.

Having now ſaid a few words concerning tythes, as ſettled at the reformation, and acknowledged that they are at this time collected by legal authority, I proceed to ſhew in what reſpects the exaction operates as an impediment to improvement

It has long been received as an axiom, that every tax, which operates with greater ſeverity upon the induſtrious than the ſloven, muſt, in principle, be a bad one. Tythes operate preciſely in this manner: If a farmer allows his land to lie waſte, he pays little or rather no tythe: if he cultivates it imperfectly, his ſhare of the burthen is not much encreaſed; but, if he plows, drains, and manures his waſte land, or introduces a more perfect ſyſtem of cultivation on his arable land, then inſtantly his payment is doubled, tripled, and even quadrupled. For doing what, in fact

fact, deſerves a public reward, an additional payment is impoſed on him, and this paywent is at all events certain, when the profits of the undertaking are contingent and hazardous. This is not declamation, but a ſober ſtatement of facts. Surely then ſuch a ſyſtem muſt be conſidered as holding out a great obſtacle to improvements. If farmers poſſeſs common ſenſe, or have any regard to their own intereſt (which your correſpondent, to be after noticed, ſeems to conſider as ſynonimous) then aſſuredly they will be cautious how they embark in improvements, which muſt at all events prove beneficial to others, without any moral certainty of benefiting themſelves. Tythe is a handſome profit when waſte land is cultivated: the natural value of the ground is trifling, but the expences laid out in rendering it arable are conſiderable. Tythe is of courſe drawn, not only from the land, but alſo out of the whole expences incurred in improving it, which, in numberleſs inſtances, far exceed the original worth of the property.

Tythe, though apparently an equal tax, is in reality more unequal than any tax yet deviſed. On poor ſoils, the tenth of the crop, though nominally exigible, upon the ſame ratio, is more ſeverely felt by the poſſeſſor than when paid from good ſoils. To you, who unqueſtionably have ſtudied the ſubject, an explanation may be ſuperfluous; but to others, who are not ſo verſant in political oeconomy, it cannot be improper to elucidate an opinion which, I confeſs, has at firſt ſight a paradoxical appearance.

All poor ſoils, like land in its natural ſtate, require conſiderable outlays before they can be rendered comparatively fertile and productive. I do not hazard much when I maintain, that five quarters per acre will be gained at leſs expence upon rich loams and clays than three quarters per acre from thin clay and mooriſh ſoils. Theſe inferior ſoils require more manure, more labour, as much, if not more, ſeed than ſoils of the firſt deſcription, conſequently the diſpoſeable balance, from which tythe muſt be paid, is out of all bounds diminiſhed. In the one caſe, tythe will amount to about 17 *per cent.* on the diſpoſeable produce, whereas, in the other, it will be found not leſs than 32 *per cent.* a difference which few people ever troubled themſelves to calculate. As I wiſh to make myſelf perfectly underſtood, I ſubjoin a few figures in illuſtration of the argument.

Take

Take the crop on a rich field of loam or clay at five quarters per acre on an average, *inde* - 5 qrs. 0 buſh.

| | | |
|---|---|---|
| Deduct ſeed, on an average of grains, | 4 buſh. | |
| corn for working ſtock | 6 | |
| ditto for farm ſervants | 3 | |
| ditto for incidental expences, ſuch as harveſt work, tear and wear, &c. - | 4 | |
| | 2 1 | 2 1 |

which leaves a diſpoſeable balance of two quarters ſeven buſhels per acre, as a fund from which tythe can be paid; but as the whole crop is tytheable, the amount thereof is four buſhels, or nearly 17 *per cent.* on the diſpoſeable produce.

Take the crop on thin clay, or mooriſh ſoil, at three quarters on an average, *inde* - 3 qrs.

| | | |
|---|---|---|
| Deduct ſeed - | 4 buſh. | |
| Horſe corn - | 6 | |
| Farm ſervants - | 3 | |
| Incidentals - | 3 | |
| | | 2 |
| | | 1 |

which leaves a diſpoſeable balance of one quarter per acre as a fund from which tythe can be paid. The tythe of three quarters is two buſhels, two pecks, or thereby, or nearly 32 *per cent.* on the diſpoſeable produce; though, in the laſt caſe, I have ſtated the incidental expences at one buſhel per acre leſs than in the other, which, where good management is practiſed, may be a queſtionable circumſtance.

Thus it appears, that the poſſeſſor of a good ſoil, who raiſes five quarters per acre, pays tythe, when it is collected in kind, at the rate of 17 *per cent.* of the grain remaining on hand, after the expences of working the ſame are defrayed; while the poſſeſſor of inferior ſoils, who raiſes three quarters per acre, pays at the rate of 32 *per cent.* though the tax, at firſt ſight, is preciſely the ſame in both caſes. After this ſtatement, which, it is preſumed, as a general illuſtration, will not be found far from the truth, can it excite ſurpriſe, that waſte lands and inferior ſoils remain unimproved among our ſouthern neighbours?

I might now ſhow in what reſpect tythes prevent the cultivation of waſte lands, were I not fully ſenſible that few people are ſo ignorant as to deny the truth of this propoſition. Indeed, to attack tythes merely upon account of their conſequences, is little better than attacking a man of ſtraw, who is incapable of making

ing the ſlighteſt defence. It is not concerning their utility or expediency that economiſts diſpute. Upon this point almoſt every one is agreed who has inveſtigated the buſineſs. The difference which prevails ariſes entirely from the difficulty of making a juſt arrangement, where ſo many intereſts are concerned. If tythes, however, prevent the improvement of the country, or, in other words, occaſion the national ſtock to be leſs than it would be if they ceaſed to operate, every friend to his country will join me in declaring, that a remedy ought to be ſought after; nay, even if a ſtrong meaſure is neceſſary to remove ſuch an extenſive evil, that it is an incumbent duty upon the government of the country to put ſuch in execution.—*Salus populi ſuprema lex.*

After having fully conceded the right of impropriators, it cannot be ſuppoſed, that, in propoſing a commutation of tythes, I am in the ſmalleſt manner hoſtile to their intereſts. My ideas are, that ſuch holders are entitled to a full compenſation, if the tax was to be aboliſhed; and I am clear, that it is for their real intereſt that an adjuſtment ſhould be made. The unproductive ſtate of ſuch an extenſive portion of the national property does not ſerve them; nor is it practicable to collect the full value of tythes were laws multiplied at *infinitum.*

I am convinced, that it is the difficulty, not the inexpediency, of a commutation, which has hitherto prevented ſuch a ſalutary meaſure from being enacted. It has been propoſed to value all the tythes preſently paid, and to make that valuation the rule of payment in all time coming; but to this it is objected, that no regard is thereby paid to the gradual depreciation of money, conſequently that the real value of the payment might be annually diminiſhed. The plan eſtabliſhed in Scotland has been alſo recommended; but, though this would effectually remove the evil, yet, as the right of impropriators is now better ſecured than in Charles I's. days, it is evident that ſuch a plan ſtands little chance of being adopted. Again, a corn rent has been propoſed by ſeveral people, and by others, that a certain part of all tytheable land ſhould be ſet apart, in lieu of an annual payment. To both theſe modes of adjuſtment, ſtrong, and, in my opinion, valid objections may be offered. Corn is but an awkward article for clergymen to deal in; and, at any rate, ſuch a mode of payment could not apply to paſture and waſte land. Beſides, it would open a door for conſtant ſquabbling about the quality of the article delivered. The other mode of adjuſtment, giving land in lieu of tythe, would, ſo far as the clergy are concerned, be ſtill worſe in a national view. It would put ſuch a quantity of land in a ſtate of mortmain as would inevitably encreaſe

creaſe the evil to the ſtate which the commutation is meant to correct.

From all theſe conſiderations, it appears to me, that no method can be deviſed for regulating tythes ſufficient to remove the evils attendant upon the preſent ſyſtem, and ſecure ſo effectually the intereſt of all parties, as a general law fixing a payment in money, according to the rentals of the land from whence tythes are exigible. Such a plan carried into execution would do away the complaint, that tythes obſtruct improvement. It would allow the proprietor to receive full value of his company concern; it ſecures the tythe-holder in his ſhare of the property, as aſcertained by the legiſlature; and prevents the farmer from being deprived of the benefits flowing from ſuch meliorations as he may have made on the land he occupies.

I am at a loſs to diſcover any objections that can be made to the principles of this adjuſtment, though aware that, in applying the principle to practice, a diverſity of opinions may prevail reſpecting the ratio of payment to be ſubſtituted; but with a full conſideration of the queſtion before me, I humbly ſuggeſt the following outlines of an adjuſtment that would promote the public welfare, and ſecure the intereſt of every individual concerned in the collection or payment of tythes. I propoſe that the whole land in England ſhall be arranged into three claſſes; 1. Old Arable, 2. Paſture, 3. Waſte. The firſt claſs under the preſent ſyſtem pays almoſt the whole tythes that are collected, therefore, any permanent regulation ought in juſtice to be higher upon this than the other two claſſes, even holding the different values in view. The ſecond claſs is, in nine inſtances out of ten, kept from convertible huſbandry, to eſcape the burthen of tythe; and the laſt, except in a few caſes, does not yield produce from which tythe can be exacted. Under theſe circumſtances, it would be unreaſonable to demand a commutation upon the ſame ratio, from theſe different claſſes, though it is fair that each of them ſhould bear a reaſonable proportion.

The Scotch law declares, that one-fifth of the free rental ſhould be held as equal to the tythe of land. This principle, though evidently a fallacious one, has the merit of being clear and diſtinct, which is a neceſſary quality in every public meaſure. The fifth of the rental in all caſes, like the tenth of the produce, muſt operate very differently in different ſituations, but ſtill not to the ſame extent, when the rental only is affected, and ſtock in trade and perſonal abilities are exempted.

I ſhall therefore take the Scotch law as the baſis of the propoſed adjuſtment, and recommend that one-ſixth of the rental of land, preſently in an arable ſtate, ſhould be ſet apart in lieu of tythe in all time coming; and that where fines or graſſums are paid,

paid, the tythe holder ſhould have a claim for the ſame proportion of all ſuch fines or graſſums levied by proprietors. This ſhare of rental to increaſe or diminiſh as rents increaſed or diminiſhed, which obviates every objection hitherto offered againſt a commutation in money; allows the tythe-holder a due ſhare of every emolument that might ariſe from the encreaſing proſperity of the country; and prevents him from ſuffering a loſs in caſe money ſhould fall in value, as has hitherto happened.

Thoſe who are acquainted with the ancient Scottiſh tythe ſyſtem, will at once perceive, that though I have taken it as the baſis of my plan, yet I have deviated a little from it in the rate of commutation. The proportion in Scotland is one-fifth of the rent, but I have ſtated one-ſixth as an equitable payment. It is well known, that in Scotch valuations, deductions are conſtantly made for improvements, and that in fact tythe, even at the time of valuation, ſeldom exceeds one-ſixth of the real rental. Beſides, under the propoſed adjuſtment, the proprietor has a fair claim to an eaſe or deduction, upon account of future improvements, from which the tythe-holder would conſtantly reap profit without being ſubjected to any expence.

If we may ſuppoſe that the average rent of arable land in England, ſubject to tythe, is 25 ſhillings per acre, and that it would be worth 30 ſhillings when exonerated, then the ſum payable to the tythe-holder would under this ſuppoſition amount to 5 ſhillings per acre, ſo long as the ſcale of rent remained on its preſent footing. If rent increaſed, ſo would the tythe duty increaſe; the intereſt of all the parties would go hand in hand; and, while the obſtacle to improvement would be removed, which is the chief object intended, ſecurity would be gained by all concerned for enjoying the full advantage of their ſeparate rights.

The ſecond claſs of land is the old paſtures. The introduction of convertible huſbandry, the main ſource of tythes, is effectually prevented upon land of this deſcription; and as, without convertible huſbandry, few tythes can be collected, it muſt appear reaſonable that a different baſis ſhould be aſſumed when treating of the rate to be paid in lieu of tythe under ſuch circumſtances. Perhaps one-tenth of the rent is too much to be levied upon ſuch lands. I am clear it ought not to be higher; and when the general richneſs of the old paſtures is conſidered, it ſeems probable that a tenth here will be equal to a ſixth of the rent of old arable land. This rate I propoſe ſhould continue in all time coming, whether convertible huſbandry is, or is not, introduced.

The laſt claſs is the waſte lands. Here it is obvious, that tythe from ſuch lands depends entirely upon the nature and extent of the improvements that are made, for, in their natural ſtate,

ſtate, the tytheable produce is very limited. As it is perhaps upon lands preſently characteriſed as waſtes that the greateſt artificial improvements would be made, it is abſolutely neceſſary that the rate of payment ſhould nominally be much lower than ſpecified with regard to the other two claſſes; though I have no doubt but that in reality the greateſt increaſe of tythe would ariſe in this claſs. I propoſe, therefore, that one fifteenth of the rent ſhould be conſidered as a full compenſation for tythe upon all lands of this deſcription. Perhaps many people may view this as too high a compenſation; but when it is conſidered that rent, at the outſetting, when improvements are making, muſt of courſe be very low, and that it cannot riſe till a degree of perfect culture is eſtabliſhed, I entertain a hope that the rate propoſed will be viewed as equitable and reaſonable.

Thus I have briefly ſtated the rough outlines of a plan for removing an important agricultural grievance; and there cannot be a doubt entertained, but that the public intereſt, as well as that of individuals, would be materially advanced were ſuch a plan carried into execution. The public would be benefited by a general introduction of convertible huſbandry, and by the culture of that large portion of the iſland, which, to the ſhame of our government, is ſuffered to remain almoſt in a non-productive ſtate: The landed proprietor would receive the full value of his property, as a removal of tythes would inſtantly occaſion convertible huſbandry to be generally diſſeminated, and be the forerunner of a great riſe of rent: The tythe-holders, whether clergymen or lay-impropriators, would likewiſe participate of the general advantage. At the outſet, it is probable that the amount of tythes would exceed, at leaſt it would be equal to, the tax in kind, or the money preſently levied in lieu of it, while all the drudgery, all the ill will which inevitably fall to the lot of the collector, would be avoided. As to the farmers, they would moſt likely gain more than the proprietors, or tythe-holders, by the eſtabliſhment of ſuch a commutation. They would be free of arbitrary exactions levied in direct proportion to the extent of their merits and abilities. When improvements were made, they would be ſecured from the interpoſition of a third perſon; and rent being fixed, no demand for a ſhare of profits could be made, during the currency of a leaſe, by any perſon whatever.

In order that a commutation of tythes, ſo devoutedly to be wiſhed, might be carried into execution, all that ſeems neceſſary, in the firſt inſtance, is an act of the legiſlature to aſcertain the baſis upon which the commutation is to be made. Under the ſuppoſition that a plan, ſuch as I have taken the liberty to offer, is juſt and equitable, the act ſhould direct that a commiſſion for

each county ſhould be granted, with power to name ſub-commiſſions for each pariſh, by whom the whole lands therein ſituated ſhould be claſſed. The county commiſſioners to review and amend the parochial reports where neceſſary; and, being made up, they ſhould be regiſtered in the county records as a rule of payment in all time coming.

It may perhaps be expedient to allow proprietors of land the alternative of accepting a commutation or not, but having once taken the benefit thereof, no change to be allowed afterwards. Where a *modus* has been legally ſettled, or is ſupported by preſcription, the act ought not to include ſuch caſes, the object in view being already obtained.

In theſe outlines I make no reference to a ſale of tythes, but leave proprietors on both ſides to make arrangements, as may be done in other caſes with any branch of private property. Whether ſales take place or not, is a circumſtance unconnected with the public good; for if tythes are conſtituted a rent charge upon permanent principles, it does not matter to whom they belong.

Having taken up ſo much of your time, I ſhall confine my remarks on Mr T. S.'s defence of tythes, vol. 3. page 421, within narrow bounds. Indeed, the manner in which I have conſidered the ſubject, has neceſſarily occaſioned me to foreſtal ſeveral arguments very applicable to the paper now to be noticed.

Mr T. S. ſets out with obſerving, that 'the general ſtrain of your Magazine is inimical to tythes,' and that 'to him the ſubject ſeems to be very imperfectly underſtood.' Could he expect that a burden which no man acquainted with the circumſtances, unleſs perſonally intereſted, will ſanction with his ſupport, would be countenanced by the conductors of a work, the leading object of which is to promote improvements? That the ſubject is imperfectly underſtood I readily acknowledge; perhaps a ſtriking proof of this circumſtance may be found in the very letter now under conſideration. Allow me to ſay, that your correſpondent, notwithſtanding the candid dreſs in which his arguments are cloathed, ſeems very little acquainted with the nature and extent of tythes. You did right, however, in giving the defence a place, as the inſertion ſerved to diſplay the weakneſs of the cauſe. Truth can never ſuffer by the effect of enquiry; and the more that this, or any ſubject, is inveſtigated, the greater light will be thrown on 'all its bearings' and conſequences.

In the defence of tythes, a good deal of extraneous matter is introduced; and it is even hinted, that our admirable conſtitution ſtands a chance of being overturned if tythes are meddled with. Were I to notice theſe things, or merely to reaſon upon them,

them, I might state, that the commutation already established in North Britain proves that such a measure may be accomplished without the injury apprehended. I have a higher opinion of your correspondent's good sense than to suppose he really labours under such apprehensions. Tythes, it is plain, may be commuted with as much facility as the duty on tea was converted into a window-tax, or, as more recently happened, when the coal-tax was changed for an additional duty on spirits. The British Legislature have, in many instances, (and certainly such a power is the inherent right of every government) interfered with private property. I might quote the jurisdiction act, which is exactly in point, nay, every canal, road, or harbour bill, that ever passed, will bear me out: but what need is there for any argument at all, since we all feelingly remember an act lately passed, which, if it had not been repealed, would, in a given number of years, according to circumstances, have cut deep into the property of both land holders and tythe-holders. Consider these things, and say whether the regulation of tythes would trench more upon the sacred rights of individuals than the instances of legislative power that I have quoted.

The cause why the owners of tythes are alarmed, when the subject of commutation is mentioned, proceeds from an apprehension that the discussion may be fatal to their interests. Your correspondent states their right to the tenth of the produce, or to the fifth of the soil, to be as strong as that of landholders to the remainder. I presume he is here in an error. It was never understood that an annuitant, or a servant, whose annuity or wages were paid out of the rents or produce of an estate, had any right at all to the estate itself, but that their claim upon the premisses ceased the moment that such annuity or wages were paid. In the business of tythes, lay impropriators may fairly be considered in the light of annuitants, and clergymen as servants who undertake to perform such and such work upon certain conditions. The lay-impropriator, like other annuitants, receives his annual payment without discharging any duties. The clergyman, on the contrary, renders a return for his stipend or wages; and it is presumed, that if he fails in rendering this return, he could not legally claim the emoluments.

If these things be a just representation, what shall I say concerning the alternative held out, whether the property should be sold for the benefit of the real proprietors, or of those who, in the language of Rodondo, may be considered as a mortgage upon the premisses. To suppose for a moment such an alternative necessary, is highly ridiculous. The keenest adversaries to tythes have never

never gone farther than pointing out the propriety of valuing them, though no doubt different ideas have prevailed concerning the basis of the valuation. Their wish was to prevent tythes from operating as an obstacle to the improvement of the country. Your correspondent, in my opinion, totally misunderstands the subject; for the interest of both parties may be benefited by a commutation, as stated in the first part of this letter. The real object is, to prevent tythes from operating as a tax upon industry; and it is in this view that the public are interested. I assure him it is exactly the same to practical agriculturists whether the impropriator has a third or a fifth share of the concern. If the rate does not rise proportionally to the exertions of the occupier, the nature of the partnership will give them no trouble.

Your correspondent would infer, that tythes are not yet felt to be an evil of magnitude, because, as he says, proprietors have never been cordial and unanimous in taking steps to procure a commutation. Without laying any stress upon the old adage, 'that what belongs to every body belongs to no body,' or stating that tythes, being in all cases paid by the tenant, renders the proprietor more negligent than consistent with his interest, I may notice the application from Devonshire eight or nine years ago, and the still more recent resolutions of the Grand Juries in different counties. It may also be mentioned, that, by a strange perversion of terms, to notice this business has of late been considered as a doubtful sign of principles: and perhaps this very circumstance has contributed to prevent the question of commutation from being regularly brought forward, seeing that a collection in kind has been reprobated by seven-eights of the gentlemen employed by the Board of Agriculture in the great work of surveying the kingdom.

I might have noticed the extent of tytheable land, as an instance how little the subject was comprehended by Mr T. S. He is not content with less than an eight share of the kingdom for the holders; which, if true, would have corroborated some of my arguments against the inexpediency of the tax. A considerable part of land is tythe free: in many places, a trifling modus is only paid; and in others, from the prevalence of pasture land, little or no tythe is exacted. I speak with certainty upon these points, because I have examined into them upon the spot. The value of English tythes, in ordinary years, may amount to about three millions sterling, or nearly one sixteenth of what is understood to be the rental of the country.

But does the gentleman know what is exacted under the name of tythe,—or how the articles are divided? If he does not, the following extract of a letter, from a friend in England well acquainted with the business, will communicate some information

to

to him relative to the disagreeable situation of those placed under the tything system.

"In many places, it is the custom for the tythe-owner to require 24 hours notice to go and set out the tythes; by which it frequently happens, that though a field of corn be perfectly fit for leading and stacking, yet the cultivator is prevented from embracing the opportunity—and, before the expiration of the 24 hours, the rain comes; and if a series of wet weather ensues, the crop is often very materially injured. In addition to this, an ill-natured tythe-owner will not tythe a part of a field, but will insist on the whole being tythed at one time.

"Another hardship is, that the courts of law have determined that, after the crop is tythed and the farmer has taken his part away, the tythe-owner may let his share remain in the field, and thereby prevent the occupier from turning in any stock to depasture in the field, or to plow the land for any other crop which he might wish to put in immediately, as winter tares, rape or rye, for green food in the spring, wheat after drilled beans, &c.; and the poor injured farmer has no other remedy than by bringing an action of trespass, which, in such cases, is often worse than the disease, as most people who have been forced to seek redress by law have ever after had occasion to remember the fable of the Sheep and Bramble.

"The courts of law have made another decision that bears very hard on the cultivators of turnips.—It is admitted, that if turnips are consumed by sheep which pay tythe either in lamb or wool, that no turnip-tythe is due, provided the turnips are eaten *as they grow*; but if *severed from the ground*, and eaten not two inches from where they were produced, they are then tytheable.

"I have been always so stupid as not to perceive the justness of this decision, but clearly understand the great injury and very material loss to the cultivator, which I have had many occasions to observe, and have as frequently been tempted to think this decision the *ne plus ultra* of absurdity.

"Every farmer, who knows the value of good fold yard dung as a manure, must materially feel the want of one tenth of his produce, where tythes are drawn in kind; and where it happens on poor land, the loss is irreparable.

"Drawing tythe in kind is also a very great check to improvement in breeding live stock. It is presumed that few farmers would give 500l. for the use of a ram for one season, or 5 or 10 guineas a ewe for being served with a first-rate tup, if he expected that the parson was to come and chuse every tenth lamb, the value of which was not only derived from the tup but also from the ewes, which had been bred probably for 20 years back at a very great expence, and which, on account of their superiority, would

would be readily sold at from 10 to 20 guineas a-piece. The tythe of 100 ewes of this kind would be 10 lambs, which, at the lowest estimation, would be worth 50l.; but if they had been of the common ancient breed, would not have been worth more than 5l. Here the tythe-owner has a clear gain of 45l. in ten lambs, from the spirited exertions of an enterprising breeder, who would not have the satisfaction to preserve to himself the fruits of his well merited exertions, but the tythe-owner would be in possession of as good a breed of sheep without the least trouble, anxiety, or expence. It is instances of this kind that make tythes be considered as so great a hardship, and so loudly complained of.

"The great tythes are in general the property of the rector, and consist of corn or grain, hay, wood. The small tythes are all kinds of fruits, roots, seeds, herbs, turnips, cabbage, hops, hemp, flax, honey, wax, potatoes, saffron, wood,—by seeds are meant turnip seed, rape seed, canary seed, and other small seeds. Mixed tythes are colts, calves, lambs, kids, pigs, milk, cheese, agistment or pasturage. Wool is also a mixed tythe. The small and mixed tythes are generally the property of the vicar, and are very often separated from the great tythes. The great tythes are generally in the hands of laymen."

Let any person connected with agriculture say, after perusing the above extract, that tythes are not an obstacle to improvements. In fact, they are worse; they impede the most necessary operations of the year, viz. the harvesting, and securing of the crop. They not only occasion vexatious delays (the bane of good management in autumn), but are the source of much litigation betwixt the parties concerned. Still another trait of this tax is, that the best disposed clergyman always makes the least of his tythe. He who wishes to live peaceably with all men submits to many drawbacks in the collection, while the rough boisterous sons of the church, those who have notoriously the smallest portion of the true Christian disposition, are much better qualified for enforcing a vigorous collection of this unpopular and pernicious tax.

Before concluding, I must do your correspondent the justice to acknowledge, that he allows the exaction of tythes to be unfavourable to improvement; but while I do him justice in this matter, I am entitled to use the advantage which such a concession gives me. If tythes are unfavourable to improvement, why oppose their removal either directly or indirectly? If the welfare of the country is at heart, then, instead of stating difficulties, a real patriot would frankly lend his aid to place matters upon a proper footing. I repeat what is already said, that though I view the rights of tythe holders in a different light from your correspondent,

correſpondent, I am fully as well diſpoſed to give them a complete remuneration in the event of an exaction in kind being relinquiſhed. Their rights, at leaſt thoſe of lay-impropriators, have a long preſcription on their ſide; and, in the caſe of the clergy, few people would go farther to place them in a comfortable ſtate, though I would do this in ſuch a way as might be conſiſtent with the real clerical character, and the welfare of the country.

One or two paſſages more of Mr T. S's. letter deſerve animadverſion; but I have really occupied ſo much room, that I am apprehenſive of encroaching upon your patience. I cannot however altogether paſs what is ſaid concerning the Duke of Bedford, Mr Young, pleaſure grounds, and working with oxen; but the obſervation ſhall be a ſhort one. If an individual manages his property in an improper way, he certainly is the greateſt ſufferer: and a law to compel every man to become a good farmer, would be fully as ridiculous as a law which enacted that every man ſhould poſſeſs common ſenſe. A man poſſeſſed of graſs ground will break it up if he ſuppoſes it his intereſt. In ſome caſes, his pleaſure would not be promoted thereby; and, upon a ſimilar principle, every farmer will work or refrain from the employment of oxen. There is neither law nor cuſtom to prevent any one from uſing his liberty in theſe reſpects; but where is the analogy betwixt ſuch matters and tythes? Let a perſon be never ſo much convinced of the impolicy of the tax, ſtill he is not permitted to refuſe payment; whereas in the working of oxen, or breaking up of graſs grounds, every one is left to act in ſuch a way as appears moſt conducive to his own intereſt.

I might have noticed the paſſages under conſideration in a different way. Granting that the Duke of Bedford and Mr Young were both in the wrong; that oxen are preferable to horſes for farm labour, and that every acre of graſs ground in the kingdom ought to be broke up, how can the truth or falſity of theſe circumſtances affect the tythe queſtion? If I were called to appear before your correſpondent, and charged with breaking the ſixth command, he ſurely would not receive an accuſation from me againſt another for breaking the eight command as a relevant defence. I grant that the compariſon made betwixt tythes and horſes carries a ſpecious appearance. Both are condemned by many agricultural writers, the laſt chiefly by theoretical ones. Yet, ſays your correſpondent, oxen are not uſed nor are tythes commuted. I don't think, however, that the inference made is a candid one. Every farmer may work oxen if he pleaſes, but, as they are not wrought, ſure evidence is furniſhed that horſes are more profitable. The abrogation of tythes cannot take place in this manner.

manner. The power is in the hands of men who, generally ſpeaking, may be ſuppoſed not very verſant in ſuch affairs. Beſides the trading and commercial intereſts, who are little affected by the exaction of tythe, have got a preponderance in the legiſlature not ſo favourable to the proſperity of the country as could be wiſhed.

One word more, and I have done. Your correſpondent, ſomething like Rochefoucault, lays it down as a principle, that all men of good ſenſe are guided by worldly intereſt. If this be the caſe, why ſhould farmers be denied the uſe of this principle, unleſs it be preſumed that they are not under its influence? The great majority wiſh to get quit of tythes, not becauſe they would then pay leſs rent, but merely that they may peaceably enjoy the fruits of improvement, and be rid of a burthen, which, in every point of view, is vexatious and oppreſſive. I am,

Yours, &c.

A FRIEND TO IMPROVEMENTS.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Enquiries concerning the Use of Marle.*

SIR,

CONSCIOUS of the great utility of your work, and of your readineſs to comply with any requeſt that may tend to the elucidation of ſubjects not clearly underſtood, I take the liberty of ſubmitting a few thoughts to your conſideration upon a buſineſs of great importance to the farmers of this part of the united empire.

Ireland abounds with boggs and moſſy grounds; and under the greateſt part of them a ſtratum of marle is found. The properties of this manure are imperfectly underſtood; and if we reſort for information to theoretical writers, we are only puzzled and perplexed by the contradictory directions given. As I diſcern that the greateſt number of your correſpondents are practical farmers, it occurs that ſome rules for the uſe and application of this valuable manure, founded upon the baſis of experience, may be got from them. May I therefore ſolicit their attention to this ſubject, and directions reſpecting the kind of ſoil beſt calculated for the application of marle, the quantity neceſſary for an acre, and the propereſt time of laying it upon the ground? I am, Sir, yours, &c.

A CONSTANT READER.

A SHORT

FOR THE FARMER'S MAGAZINE.

## A SHORT STATEMENT OF VARIOUS MEASURES,

CALCULATED FOR THE

## IMPROVEMENT OF THE COUNTY OF CAITHNESS,

CARRYING ON IN THE COURSE OF THE YEAR 1802.

THE Account which was publiſhed about twelve months ago, of the Improvements carrying on in the County of CAITHNESS, *anno* 1801, having met with a very favourable reception, I am thence induced to continue the ſame plan for the current year 1802. The utility of ſuch ſtatements can hardly be queſtioned. They ſerve not only as memorandums to the inhabitants of the diſtrict to which they relate, inciting them to perſevere in the plans therein ſuggeſted, but they alſo furniſh a number of uſeful hints to other places; and they have a ſtrong tendency to excite a general ſpirit of Cultivation and Improvement, throughout the whole country. On theſe grounds, I hope that the publiſhing of ſuch Annual Reports, inſtead of being confined to this remote County, will ſpread over the kingdom in general.

1. The *Trial for Coal* at Scrabſter, unfortunately has not hitherto anſwered; but there is ſtill reaſon to hope, that deeper bores may be ſucceſsful. In the interim, ſeveral Gentlemen in the county have employed a ſkilful Surveyor to ſearch for other Minerals on their reſpective eſtates; and he has already diſcovered conſiderable quantities of Marl and Limeſtone; alſo Clays, valuable for making Bricks and Tiles, and for Potteries. Some Manganeſe, and Lead Ores, have alſo been found. The particulars of the whole will be laid before the public, as ſoon as the ſurvey is finiſhed.

2. An act for *Making a Harbour* at Thurſo, having paſſed in the courſe of the laſt Seſſion, that important undertaking is to be ſet about, as ſoon as a proper contractor for executing the ſame can be got. It is intended to make the Harbour as complete as poſſible, ſo as to admit veſſels of from 300 to 500 tons, at leaſt in ſpring tides; alſo to have a Graving Dock, a Regulating Weir, and a Slip for Ship-building. The whole expence will probably exceed 10,000l.; but it is deſirable to lay a foundation for that extenſive commerce to which Thurſo, from its ſituation and other advantages, ſeems to be ſo juſtly entitled. About twenty houſes have been already built in the New Town of Thurſo, and about twenty more will probably be erected next year, in addition to a number of houſes recently built in the Old Town; ſo that accommodation will ſoon be found for thoſe who may be inclined to ſettle in this thriving place, and to carry on commercial, and other branches of induſtry. Such is the ſpirit of improvement in that neighbourhood at preſent, that ſome incloſed land near Thurſo has let, on a ſhort leaſe, as high as five pounds per acre. On a leaſe of twenty-one years, a field of five acres has been let for five guineas per acre for ten years, and ſix pounds per acre during the remainder of the term.

3. The *Herring Fiſhery* on the coaſt of Caithneſs was rather more ſucceſsful this year than the laſt, above ten thouſand barrels having been caught. Had the propoſed harbour at Wick been erected, which we truſt will be the caſe next year, the fiſhery would of courſe have been carried on to a much greater extent. Some caſks, of different ſizes, were cured in the Dutch ſtyle, and, it is believed, were of equal good quality: But it is impoſſible to carry on that branch of the fiſhery with much ſucceſs, until harbours are made upon the coaſt, to accommodate, and, in caſes of neceſſity, to ſhelter, the perſons who may engage in the deep-ſea fiſhery.

4. The celebrated paſs of the *Ord of Caithneſs*, of which Mr Pennant, in one of his northern tours, has given ſo terrific, but ſo juſt a deſcription, has long been remarkable for the ſteepneſs of the aſcent, and the danger of the road acroſs it. In conſequence of directions ſent by Lord PELHAM to Lieutenant-General VYSE, it was ſurveyed this Summer by that excellent engineer Mr CHARLES ABERCROMBIE, who has diſcovered a mode of conducting the road without the ſmalleſt difficulty

or

er danger; and the aſcent, inſtead of being ſo uncommonly ſteep, will not exceed one foot in thirty, in any part of it. There is every reaſon to hope that ſomething effectual will be done for the Roads and Bridges of the North, in the courſe of the enſuing Seſſion of Parliament.

5. The *Eſtabliſhment of Various New Branches of Manufacture* are in contemplation, ſeveral propoſals having been given in for that purpoſe; in particular—for an Woollen Manufacture—for the Spinning and Weaving of Hemp—for the Making of Bricks and Tiles—for the Manufacture of Soap and Candles, &c. &c. Ship-building has already begun at Ham, and a Roperie at Caſtlehill. The branches formerly eſtabliſhed in this county have ſucceeded ſo well, that a gentleman in the ſouth of Scotland, who had taken a ſhare in them, to the amount of 25l., and who probably never expected to hear of it again, was lately agreeably ſurpriſed to be informed, that he might receive 65l. for his ſhare in the concern.

6. Some farmers from the ſouthern parts of Scotland, have already taken farms in Caithneſs, and more are expected. There is every reaſon to believe, that when the prejudices againſt a northern ſoil and climate are removed, numbers will be glad to ſettle in a diſtrict where they will enjoy many advantages, amply compenſating for any inconveniences to which they may be ſubjected. An excellent ſyſtem of improvement is now adopted; that of letting the old ſtock land, and a part of the adjoining commons, to ſubſtantial farmers, on improving leaſes; and then to divide the remainder of the commons among the ſmaller tenants, whom it is neceſſary for that purpoſe to remove. By theſe judicious meaſures, the population of the country is preſerved, whilſt its improvement will be rapidly accelerated.

7. The *Cultivation of Waſtes* is going on with ſpirit, and with as much ſucceſs as could be expected, in a ſeaſon ſo little calculated for improvement. One proprietor has ploughed between 500 and 600 acres of waſte land; the whole of which, and even more, would have been under crop this year, had the weather been favourable. The plan of dividing commons, alſo, by a ſubmiſſion to the gentlemen in the neighbourhood, is found to anſwer. An extenſive and valuable tract, amounting to about 2500 acres, has been divided this year, at a very moderate expence; and another,

exceeding 4500 acres, is now in the ſame train. An opportunity is thus afforded, of providing for the ſmaller tenants, who muſt be removed, where farms are enlarged; and alſo of ſettling any diſbanded ſoldiers, and others, who may be inclined to cultivate waſtes at home, inſtead of flying to the wilds of America.

3. The moſt extenſive experiment tried, in cultivating waſte land this year, and ſucceſsfully carried through, was as follows: On the 7th of April laſt, five men from Weſtmoreland, accuſtomed to paring and burning, began to pare, with the breaſt-plough, a tract of common containing about 80 Scotch acres. A ſufficient number of hands were, at the ſame time, employed in ſurrounding the whole with a ditch, and ſubdividing it by croſs drains, into four encloſures. In ſuch a ſeaſon, when hardly a peat could be got ſufficiently dry for uſe, it was impoſſible to expect, that the land, thus pared, could be burnt in proper time for cropping. However, by great exertions, in the ſhort ſpace of about five months, the whole 80 acres were pared, burnt, incloſed, ſubdivided, ploughed, and partly ſown with rape, turnips, &c. The ground thus brought into cultivation, was ſet up to auction, to ſee what it would fetch; and was let, on a leaſe for 21 years, for 20 ſhillings per acre; with an increaſe of 5 ſhillings per acre, at the end of the firſt ten years. The expence of this improvement may be thus eſtimated:

| | | | |
|---|---|---|---|
| 1. Paring and burning per Engliſh acre - | L. 1 | 17 | 0 |
| 2. Spreading the aſhes - - | 0 | 3 | 0 |
| 3. Ploughing for ſeed - - | 0 | 10 | 0 |
| 4. Harrowing for ditto - - | 0 | 3 | 0 |
| 5. Encloſing and ſubdividing into fields of 22½ Engliſh acres each, with a ditch and a ſod wall - - - | 0 | 15 | 0 |
| Total per Engliſh acre - | L. 3 | 8 | 0 |
| 6. One fifth additional, to aſcertain the expence per Scotch acre, - - | 0 | 13 | 6 |
| Total per Scotch acre - | L. 4 | 1 | 6 |

—In a favourable ſeaſon, the firſt crop would have paid all the expence, both of the cultivation and encloſure; but if

if it did not, there is ſurely ſufficient inducement to improvement, if, at an expence of about 4l., you can have an increaſing income of 20 ſhillings per acre. By the above plan, the landlord runs little riſk; he merely carries on the great outlines, leaving the minuter details to be managed by an active and attentive huſbandman, who is much more likely to do juſtice to the progreſs of the improvement, than any proprietor, were he even conſtantly reſident upon the ſpot.

9. The laſt Spring and Summer were ſo hoſtile to every attempt, the ſucceſs of which depended on the operation of fire, that it retarded much the progreſs of the Fen huſbandry in Caithneſs. Notwithſtanding every diſadvantage, however, between 200 and 300 acres have been pared with the Fen Plough, and about 50 acres burnt, and laid down with Rape, Chicory, Graſs Seeds, &c. After the aſhes from the firſt paring and burning have been ſpread, it has been found a moſt uſeful practice, to uſe Cooke's Cultivator, ſo as to bring the land into good tilth; and this plan is particularly neceſſary if new land is cultivated on the Fen ſyſtem. Where this inſtrument was uſed, which was to the extent of about 20 acres, the rape and graſs ſeeds are particularly promiſing.

10. Many tracts of waſte land have *a ſterile cruſt* on the ſurface, generally of a peaty nature, and, conſequently, eaſily burnt, while the ſoil below is commonly clay, and capable of being rendered fertile. Some lime the ſurface of ſuch ſoils; others bury the cruſt by trench ploughing—both of them tedious and expenſive operations. But the true mode is, *to extirpate the principle of ſterility*, by the following proceſs: During Winter, plough the land three or four inches deep, ſo as to reach the clay; croſs-plough it in Spring; and, as ſoon as the clods are dry, burn the whole ſurface in large heaps, ſpread the aſhes, and ſow oats, beer, turnips, rape, or graſs ſeeds, according to the ſeaſon during which the burning can be accompliſhed. About 12 acres were treated in this way, and at once brought, from being coarſe, rugged, and barren, into a capital ſtate of tillage and fertility. The expence did not exceed 50s. per acre.

11. There is no ſoil naturally more unproductive, nor more difficult to render fertile, than a cold and coarſe clay. The uſual mode of improving that ſoil, is, by a ſtrong doſe of lime,

lime, which, including the expence of carriage, cannot be calculated at leſs than from 5l. to 10l. per acre. From ſome experiments tried in the central counties of England, there was reaſon to believe, that burning the whole ſurface of ſuch a ſoil, was a cheaper and better mode of improvement. As this was a moſt material point to aſcertain, it was intended to make a trial on a large ſcale; but, owing to the uncommon wetneſs of the ſeaſon, only five acres could be completed. The expence was as follows:—

| | | | |
|---|---|---|---|
| 6 tons of coal and culm, at 16s. per ton - | L. 4 | 16 | 0 |
| Carriage of ditto from the ſhore to the field - | 0 | 10 | 0 |
| 40 cart load of peats, at 1s. each - - | 2 | 0 | 0 |
| Additional expence of carriage, 13 of theſe cart-loads being brought from a conſiderable diſtance - - - - - - - | 1 | 1 | 0 |
| 126 labourers (including women and boys) for gathering and burning the ſods, at 1s. on an average - - - - - | 6 | 6 | 0 |
| Spreading the aſhes, at 6s. per acre - | 1 | 10 | 0 |
| Total - | L. 16 | 3 | 0 |

—or about 3l. 4s. 6d. per Scotch acre. Every thing is here ſtated at the higheſt rate; yet there is hardly any mode (unleſs in the immediate vicinity of dung or lime) where that kind of ſoil could be made equally productive, at double, or even triple the expence. It is proper to remark, that the beſt mode of burning the clay, is in ſod kilns, ſimilar to thoſe in which they burn limeſtone in ſeveral diſtricts.

12. A number of other Agricultural Experiments have been tried, in the courſe of this year. They are too numerous to be detailed in a paper of this deſcription; but, the reſult of ſome of the moſt important of them, it may be proper briefly to mention. 1. It appears that Winter wheat is a much hardier grain than Winter rye. 2. Winter tares cannot be depended on in the northern part of the iſland; but they may be ſown early in Spring with much advantage, and anſwer better than what are called Spring tares, being much hardier. They ſhould be ſown, however, immediately after the land is ploughed. 3. There is reaſon to believe that carrots will anſwer on fen or moſſy land, if

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a ſufficient quantity of aſhes is ſpread on the ground where they are ſown; and it is probable that lime, and other manures, may raiſe that valuable crop on peaty ſoil. 4. It is deſirable to cultivate oats having only one pickle, inſtead of two or three. * The grain is plumper, ripens earlier, and is much leſs liable to ſhake: the ſample, alſo, is more equal, and, conſequently, muſt fetch a better price at market. 5. An acre of moſs land, after being pared and burnt, was ſown, on the 30th of May, with graſs-ſeeds alone, (red clover, rye-graſs, with a ſmall mixture of other graſſes), and on the 30th of September it was fit to mow. The plan of laying down land, even in good heart, to graſs, without a crop of grain, cannot be too ſtrongly recommended; but it would ſeem to be a ſyſtem peculiarly well adapted for new lands. 6. It would appear, that the northern parts of Scotland produce peat, the aſhes of which is equal in quality to the Berkſhire, when burnt by the ſame proceſs. 7. Chicory is likely to prove a valuable addition to Britiſh herbage.

13. Some Extenſive Improvements have been recently made in this county by *Draining*, in particular at the loch of Duren, where a great tract of valuable land, and an inexhauſtible quantity of the richeſt marl, have been ſecured by two ſpirited proprietors, at a very moderate expence. Similar uſeful undertakings have alſo been carried on at the dam of Achingils, and the moſs of Wydell.

14. A variety of other means of improvement are in contemplation. Regular tryſts, for the ſale of cattle, are to be eſtabliſhed. Inns, where ſtill wanting, are to be built, partly on the principles of a tontine, and partly on the plan, that the freeholders, and other proprietors of the county, ſhall each ſubſcribe a certain ſum annually, towards paying the rent of an attentive innkeeper, till it appears that the profits of his buſineſs will enable him to go on without that aſſiſtance. An application is made to the Poſt-Office to have a daily poſt eſtabliſhed, inſtead of the preſent mode of only three times

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* The barley corn oat has in general many ſpecimens of this ſort of grain with one pickle. It is alſo mentioned in Mr Lowe's Agricultural Survey of Nottinghamſhire, p. 23. '*Oats are picked by hand by curious perſons for ſeed. If the top one is a ſingle oat, the reſt on that ſtem will be ſo: the double ones are rejected.*'

a week. * Some villages are planned out for carrying on the fiſheries, and different branches of manufacture. An application has been made to Government, requeſting that Circuit Courts may be held, at leaſt once a year, to the north of Inverneſs, which, in various reſpects, would promote the improvement of the more northern counties; and a petition will be preſented, as ſoon as the new Parliament aſſembles, complaining of the degrading ſituation in which the county is placed, ſending, only alternately with Bute, a member to the Imperial Parliament, and, conſequently, being every ſeven years totally unrepreſented.

Such are the meaſures now carrying on in this Northern Diſtrict. If perſevered in, and ſucceſsfully carried through, there can be little doubt that the County of Caithneſs, however remote, and at preſent almoſt inacceſſible, will ſoon reach a very high degree of proſperity and of improvement. S.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

In confirmation of what is ſaid by your ingenious correſpondent A. S. (vol. iii. p. 446) concerning the recent introduction of ſquirrels into this country, I beg leave to hand you the ſubſtance of a caſe which came before the Baillie-court of the metropolis about the beginning of laſt century.—A gentleman in India having ſent home a ſquirrel to his friend in Edinburgh, the ſame, after being landed at London, was ſhipped aboard one of the Leith traders; but unluckily the cage, in which the animal was forwarded, having been ſome how or other left open, it got out, run about the decks, and finally fell into the ſea, and was drowned. An action of damages was inſtantly brought againſt the ſhipmaſter before the Baillies; and one of them, a man of great ſagacity, interrogated the ſhipmaſter, 'Why he did not clip the bird's wings?' 'Pleaſe your honour,' replied the ſhipmaſter, 'the animal was a quadruped.' 'Quadruped here, quadruped there, no matter; I decern that you ſhall pay the bird.' And the deciſion was thought ſo juſt, that no advocation followed. Yours, &c.

AN ANTIQUARY.

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* This plan has been agreed to, and will be a great convenience and ſource of improvement to the northern diſtricts of the kingdom. Were the poſt to go by the Highland road, and on horſeback to Thurſo, which it is to be hoped will ſoon be the caſe, a letter might be conveyed from Edinburgh to Thurſo in two days, inſtead of five or ſix, the time required at preſent. What an advantage would it not be, to have ſo ſpeedy a circulation of intelligence from one end of the kingdom to the other!

# BRANCH II.

## *Review of Agricultural Publications.*

*Statiſtical Survey of the County of Kilkenny, made, in the year* 1800 *and* 1801, *by William Tighe.* 644 *pages, with an Appendix,* 119 *pages. Dublin: Printed by Graſberry and Campbell.*

Many perſons ſeem inclined to think, that the chief benefit derived from the inſtitution of a national Board of Agriculture, in Great Britain, was the general ſurvey, made under its authority, of the ſtate of huſbandry in the ſeveral diſtricts of which the iſland is compoſed. Before the publication of theſe ſurveys, farmers in different counties were almoſt equally unacquainted with the cuſtoms and practices of their brethren in other quarters, as with thoſe of foreign lands. Hence the inſtitution proved a benefit to agriculturiſts, though, perhaps, not to the ſame extent as was ſanguinely expected, when the Board was originally inſtituted.

Taking it, therefore, as granted, that the ſurvey made of Britiſh huſbandry has proved beneficial to the public, we congratulate our Iriſh brethren upon the like buſineſs being taken up among them. The Farming Society of Ireland, whoſe laudable endeavours to promote improvements were noticed in our laſt Number, are the directors in this affair, and we believe it could not have fallen into better hands. Few people in this country know any thing of Iriſh huſbandry, and as this is the firſt ſpecimen of the Society's reſearches which has reached us, we ſhall devote a larger ſhare of our journal to an examination thereof, than is conſiſtent with the variety which we uſually preſent.

Kilkenny is an inland county, ſituated in the ſouth-eaſt quarter of Ireland, containing about 318,000 plantation, or 410,000 Engliſh ſtatute acres, and 100,000 inhabitants, the greateſt part of whom are Roman Catholics. From vicinity to the ſea, the climate is mild, and harveſt proves generally a week or two earlier than in theſe tillage counties ſituated to the northward. The nature of the ſoil is ſuch, that, with proper treatment, the greater part of it may be made to produce good grain or excellent herbage Some of it is a mooriſh turf, incumbent on white or yellow clay; other parts are of a light ſoil, covering an argillaceous ſhiſtus, and a conſiderable proportion is of rich clay, loam, and

light gravel, on a limeſtone bottom. Coals are very plentiful, and of excellent qualities; and limeſtone, on which a great breadth of the county is incumbent, may be had with facility, and on reaſonable terms.

On the minerals of the county Mr Tighe is unneceſſarily diffuſe, no fewer than 88 pages being taken up with this ſection. An account of Caſtlecomer colliery will throw ſome light upon the coal-trade of the county.

'In the year 1800 there were ſixteen pits at work together in the Caſtlecomer colliery: this is about the average number; it is many years ſince twenty-four pits were worked at the ſame time, and the ſmalleſt number that has been known is twelve. From a pit there is uſually raiſed from 20 to 30 barrels a-day of coal, independent of culm. The proprietors are at the expence and hazard of ſinking pits; this is the principal charge to them under the head of contingencies, in which is alſo included the purchaſe of timber, penſions to diſabled colliers, and other articles. An abſtract is returned every week of the accounts by the agent of the collieries, in which, whenever the expences of ſinking are high, the proprietors find a balance againſt them; this, ſeems, therefore the principal point to be attended to; if the *views* of the pits can be made more extenſive, while air is communicated to a diſtance under ground, by very eaſy methods, and while advantage is taken of every deſcent of the beds for the cheaper conveyance of loads to the ſhafts; if the ſinking is never undertaken but under the direction of experienced perſons, and conducted on ſcientific principles, great ſavings may be made in this article. It happens ſometimes that, coming to *a fault*, or ſtriking upon it in ſinking, colliers proceed blindly, and miſs their aim, or are obliged to abandon the work, or ſeek for aſſiſtance, after having incurred unneceſſary expence and labour.

'Sinkers are ſometimes paid by the yard, the coſt increaſing with the depth; or elſe they receive, which is more uſually the caſe, from 18d. to 2cd. a-day, and maſter-ſinkers, who direct the work 2s. a-day. Sinking a pit will ſometimes take two or three months, ſometimes much longer; and on ſome even a year has been employed: The men work night and day from ten to twelve hours at a time; forty men are ſometimes required to a pit when there is a great deal of water, in which caſe, there muſt be a ſtage and two ſets of pullers, who keep four buckets at work; each pair of buckets demands the attention of ten men, who relieve each other. If ſuch a pit is deep, it will coſt above 2cool.; the expence of pits has varied from 30l. to 300l. and ſome have been made at a great expence without any advantage. There was one lately ſunk which

coſt

coſt 200l.; at the depth of 28 yards a bed of coal was found but 8 inches thick, and it was thought in vain to proceed any farther.

'A pit once completed is taken by a maſter-collier, who, beſides the 3s. a barrel receives the price of half the culm, which is ſold by clerks, and divided with the proprietors: the maſter and the men whom he employs conſtitute a crew; according to the difficulty of the work they vary from 30 to 40 men; 35 is not an unuſual number, beſides a horſe to a gin for raiſing water at 4s. 4d. a-day.

'The crew are divided into *colliers*, whoſe pay has been lately raiſed from 18d. to 20d. a-day, of whom a pit requires from 20 to 24; *hurriers*, whoſe pay has been raiſed from 16d. to 18d. and of whom there are generally 4. but ſometimes 3; *thruſters*, uſually 3, ſometimes 2, at the ſame wages; and *pullers*, from 4 to 5, at 13d. a-day.

'The colliers are again claſſed into *clearers*, *cutters*, and *breakers*; the firſt clear away the ſlate from the top of the coal, with a pick adapted to the purpoſe; the ſecond, with a cutting pick, which is a larger inſtrument, ſeparate the ſides of the maſs from the *backs*, by which the beds are divided; and laſtly the breakers drive their wedges in at the bottom of the coal, which, falling out, is loaded into a bucket, holding about 3½ cwt. placed upon a ſmall ſledge, which, by an iron bar hooked into a ring at the front, is drawn by the hurriers to the bottom of the pit, while the thruſters puſh it behind; the bucket is raiſed by the pullers, and, as ſoon as it is landed, is placed on a ſmall ſledge, ſimilar to the one below, and the coal drawn to the pile, at a little diſtance from the pit; beſides theſe men, a ſcavenger attends each pit at 13d. a-day.'

It would appear that the Iriſh colliers are much like their brethren in other countries. The following extract will ſhow their wretched ſtate.

'Wheaten bread is the principal food of the colliers; this they take down with them into the pits, and a twopenny loaf ſerves for a meal; bread is baked in the colliery, and the flour brought from Ballyragget or Ballinakill. Their earnings are generally conſumed in the purchaſe of ſpirits; this ruinous habit, to which their mode of labour in ſome degree leads them, is the cauſe that, though their pay is higher than that of any other workmen, yet, in appearance, they are the moſt wretched perſons in the county. Their houſes are ruinous, generally built as well as covered with ſods, upon which heavy ſtones are ſometimes laid, to prevent their being blown off: chimnies and windows are luxuries deemed unneceſſary. The children are numerous, but uſually quite naked, the parents dirty and ill-clad, and, what is worſe, the colliers are, independent of accidents, unhealthy and ſhort-lived; they ſeldom arrive at fifty years of

age. A conſumption of the lungs is the diſorder of which they uſually die; for a year or two before which event, they often throw up continually a black ſpittle: thoſe who work in wet pits live longeſt, as they do not ſwallow ſo much of the volatile duſt of the coal. The leaning poſture in which they work is unfavourable to health, as the muſcular action is conſtrained and partial, and the play of the lungs impeded: many do not ſurvive it for ten years, though there are peculiar inſtances of workmen that have been in the collieries for forty.

'In the deſcription of ſoils, it was omitted to include the mountain-land, which is of great extent, and remains moſtly unimproved. Nature, however, has not left this tract without the means of improvement; for marl, and pits of limeſtone-gravel are found in it. Mr Robert St George, an active agriculturiſt, ſtates his operations with clearneſs and preciſion.

'I will give an account of the improvement made by me and by Mr Carroll on the lands of Knocknamuck, 330 acres of which, when I purchaſed them in the year 1792, were inhabited by different families, who were not able to pay the ſtipulated rent of 7s. per acre. This farm ſtood in 12s. 9d. per acre, and having had it under improvement for three years, I let it to Mr Carroll for 28s. 9d. per acre, for 300 acres, to finiſh the improvement. A part of this land was in very poor worn out oat-ſtubbles, part in poor *coſheers*, as termed, land which had been burned and tilled for as many crops as it would bear, then left to nature; by which means it was covered with a mat of couch-graſs, and was very barren, having been ſome years out of tillage, but the greater and more valuable part of all was in heath, and had never been in tillage; had a black peat of from four to eight inches deep over a ſtiff clay, called *lac leagh*, from two to four inches deep, and that in ſome places over a black flaty rock *; in others a limeſtone-gravel. This heathy land was retentive of the rains from its matted roots, and the *lac leagh* underneath the peat, and was not conſidered worth above half rent for cattle, or 6s. per acre. The ſtubble land was of a clayey nature over flaty ſtone, and in part over limeſtone gravel. This I fallowed for a whole year by four ploughings, and as many harrowings to clean it of all weeds, and prepare it for laying down in ſpring; which I did, after laying on 200 barrels of roach-lime, ploughing it in lightly, then harrowing it when ſlacked in the earth, by which means it was moſt completely mixed with the ſoil: then ſowing two barrels of clean rye-graſs to the acre, with ten pound of white clover-ſeed mixed with it, being the ſeed moſt natural to this kind of land, where lime has its greateſt effect. I paired with the plough, and burned a large tract of the heathy part, then laid on a coat of limeſtone-gravel from a pit ſunk for the purpoſe on the hill, ſpread the aſhes

* Called in Iriſh *ſligg*.

aſhes and gravel, ploughed it in, ſowing rape on it, which ſtood for a crop, and turned out tolerably well. The next winter it was limed, about 160 barrels to the acre, ploughed in, and a crop of oats ſown, which had a great return of ſtraw, but little grain, being too rank, and the land on too expoſed a hill for it to ripen well. I purſued the ſame courſe with it in ploughing and liming, but let out to graſs with rye graſs-ſeed, ſowing the land with rape, which I found to afford ſhelter and ſhade to the young graſs; then turned in my ſheep to eat it down. This mode I prefer to letting the rape ſtand for ſeed, or to ſowing corn, as the crops do not pay in an expoſed ſituation, near as much as the rape in feeding from five to ten ſheep to the acre all the ſummer, and the graſs-ſeeds doing much better by the manure of the ſheep, inſtead of the land being exhauſted by a crop. Mr Carroll has had this land five years on his hands, draws limeſtone up the mountain a quarter of a mile to two lime-kilns, which I built a-breaſt, to turn out about fifty barrels in twenty-four hours. They have been always kept burning ſince the year 1792, except about four of the winter months. I am happy to ſay Mr Carroll has almoſt completed the improvements, and I hope it will, with other hills of the ſame nature which he has improved in the county of Tipperary, remain an advantage to his poſterity, and a monument of his meritorious induſtry.'

In the account of the mode of culture practiſed in the arable part of the county, we diſcover that the ſyſtem adopted is radically wrong, too much being devoted to the plough, and too little attention generally paid to the management of live ſtock. Theſe two branches of rural economy are not made ſubſervient to each other, which, in every juſt ſyſtem, ought certainly to be the caſe. Upon tillage-farms, the growth of wheat appears to be the ſole object in view, while, in dairy farms, the plough is altogether neglected, which prevents ſuch farms from being ſupplied with winter provender. There may be exceptions to every rule; but, while we reprobate inceſſant tillage, we are equally hoſtile to the perpetuation of graſs. By mixing the ſyſtems, or adopting what is called alternate huſbandry, the greateſt poſſible advantage may be drawn from every kind of ſoil, and the beſt farmer will of courſe be the beſt judge how often, and when, the alternation ſhould take place.

Our ſentiments on theſe matters are, in a great meaſure, in uniſon with thoſe held by the author of this work, who ſeems a ſtrong advocate for intermediate crops of green food. An extract from the ſection on the *mode of culture*, will exemplify the opinions held by him reſpecting the imperfectneſs of common huſbandry.

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'The vicinity of markets, the quality of ſoil, and the difference of expoſure, determine farmers in the choice of ſuch a mode of culture as appears to them beſt adapted to their ſituation: but, applying their mind ſolely to one branch of rural economy, they are apt to neglect every other, which ought to accompany it, and be made ſubſervient: the cultivator, whoſe object is to pay his rent by corn, diſregards the management of ſtock, and conſequently neither prepares his ground in the beſt manner for wheat and barley, by intermediate crops of green food, nor adds to his exhauſted fields new ſources of fertility by the manure of his yards: even when one ſpecies of corn appears to him moſt profitable, all other products of the ſoil are deſpiſed; if wheat can be raiſed by any means, no matter whether the ſpring corn be productive or not; and where the ſituation ſeems to ſuit better, the more lazy occupation of ſuch dairies as are never ſupplied with artificial graſſes, or even with winter provender, where cattle have neither ſtraw nor ſhelter, the plough is laid aſide, as an inſtrument almoſt uſeleſs, and not likely, in any reſpect, to increaſe the quantity of butter or of pork.

'Theſe reflections are ſtrongly exemplified in this county, whoſe ſurface is principally occupied in three different ways: in one part, the farmer calculates upon paying his rent by wheat alone, in another by oats, and in a third by the produce of a dairy. The beſt ground, the greateſt part of which has a limeſtone bottom, is dedicated to wheat; this culture is the predominant object in the central and weſtern parts of Gowran, in many farms near Kilkenny, in the ſouthern portion of Crannagh, the whole of Shillelogher, in the greateſt part of Kells, including the liberties of Callan, and in the northern ſide of Knocktopher; it is more partially cultivated in the weſtern part of Faſſadinan, in the lower grounds of Galmoy and in the adjoining part of Crannagh; as well as in the ſouth of Iverk, and part of Idaugh. The culture of wheat has latterly extended up ſome of the hills of Idaugh and Knocktopher, and other high grounds, where, a few years ago, oats were the only grain ſown: ſtill, however, the more mountainy tracts of Iverk, Idaugh, and Gowran, together with ſome of Crannagh, and of the northern part of the county are, as far as they are tilled, devoted to the culture of no crop but oats.

'There are two diſtricts peculiarly given up to the dairy; one includes that portion of the county uſually called the Welch mountains, forming the eaſtern and ſouthern part of Knocktopher, and running into the barony of Idaugh, covering a ſpace of about eight or nine miles in length, and from four to five in breadth; the other comprehends the principal part of the extenſive pariſhes of Comer and Mucullee, with ſome lands to the ſouth of them, compriſing about 30,000 acres.

'Much of this county having been, from time immemorial, ſubjected

jected to tillage, the farmers have derived their practices from a period when none of the modern improvements were yet ſuggeſted; and finding themſelves in general ſtill able not only to pay their rent, and to ſubſiſt without difficulty, but, by the increaſing value of corn, to acquire additional profits, they have little thought of making any alteration in the old Iriſh huſbandry, though the cultivators of ſome of the neighbouring diſtricts in Tipperary and Wexford, where tillage did not extend to ſo great a degree, until it was accompanied by a ſyſtem ſomewhat improved, and a little better underſtood, have in ſeveral points ſet them a laudable example; agriculture is, therefore, upon the whole, in a worſe ſtate here than in ſome of the adjoining counties; and little information can be expected from the recital of practices long condemned by the intelligent farmers of the modern ſchool: that mode of cultivation is indeed too well known in Ireland, by which a ſoil naturally fertile, but exhauſted by repeated crops of corn, is abandoned to noxious weeds for ſeveral ſucceeding years; is again broken up, ſlightly manured, exhauſted, and again abandoned, where culture, inſtead of improving, deteriorates; where no effort is made for permanent utility; where every operation of the farmer, and every work of the farm, is juſt calculated to meet the preſent neceſſity, and no more; where the different branches of rural economy, ſo far from aſſiſting each other, remain unconnected and diſtinct, in a ſtate of unnatural repulſion.

'This deſcription, however, admits of much alleviation: many gentlemen, and ſome intelligent farmers, have adopted practices founded on better principles; and have applied their minds to the improvement both of tillage and of ſtock, in a manner which, while it contributes to their own advantage, will confer an eſſential ſervice on their country: this ſurvey, then, ought to ſketch the common modes of agriculture, and to notice, wherever they occur, the improvements that have taken place.

'*Wheat.*—This grain is almoſt always ſown either after fallow, or after potatoes; but as ſcarce any more potatoes are cultivated than are neceſſary for the conſumption of the inhabitants, by far the greater part is ſown in the former way, either with or without lime; and the produce after a good fallowing is reckoned to be at leaſt one-fourth more than after potatoes. When wheat is to be raiſed upon potatoe-ground, the field is ploughed and harrowed as ſoon as the crop has been dug out, and the grain ſown moſt uſually under the plough: one diſadvantage attending this practice is, that it is often ſown too late; and that is a principal cauſe of the ſuperiority obſerved after a fallow; this name, however, is often given to potatoes by farmers, being the only fallow crop they are acquainted with.

'Fallows

'Fallows are always treated in the same manner; a stubble is usually grazed during the winter, and often not ploughed up before May, or as soon as all the business of the spring-tillage is over; in this first ploughing, the crowns of the ridges are turned into the former furrows or interfurrows; thus they lie until midsummer, and often much longer, when they are ploughed for the second time, and this plouging is generally preceded by a harrowing with a heavy or loaded harrow; another harrowing is given previous to the third or seed-ploughing, which takes place about Michaelmas: the mode of sowing is by dropping the seed along the ridge, and is often done by women, which is tedious, in comparison with the proper manner of casting it.

'It generally happens that the ridges of the second crops are reversed, the furrow occupying the place of the crown of the ridge; but this is not an object with the farmers from system; no more than is the direction in which the ridges lie, nor even an attention to make them straight and parallel: if they ran from north to south the corn would probably ripen better together, from receiving a more equal distribution of the rays of the sun.

'Some stubbles near Gowran do not get their first ploughing until June, and that is often a very partial one, merely opening the tops of the ridges, and turning them down towards the furrows, the greater part of the ground remaining unstirred; in this state they lie for three or four weeks, until it may suit the farmer's convenience to go over them again; after which it is well if they receive a cross-ploughing before autumn, or previous to seed-time; the two first ploughings are sometimes reckoned sufficient: this can hardly be called fallowing; the summer-weeds are left growing very partially covered in the furrows, where they often shed their seeds before the second ploughing. Some stubbles in the neighbourhood of Kilkenny had not got their second ploughing until the end of August, previous to which most of the weeds whose seeds were brought near the surface by the first ploughing, had vegetated and gone to seed.

'The best farmers graze their stubbles only until Christmas, and give them a first ploughing before the end of January, they cross plough in spring, and never sow wheat but after three earths.

'When ley-ground is intended for wheat, the practice of the best farmers is to break up the sod about Michaelmas, or as soon after as they can; at which time it is thrown into broad sets of about twenty yards wide; in April it is cross-ploughed and harrowed, whenever the ground is dry; and, after midsummer, it receives the third ploughing, but when manure is to be put out, either lime or sea-sand, it is spread on the surface previous to this ploughing, and thus mixed with the soil before seed-time: the corn

corn is ſown in the latter end of September, or beginning of October, in ridges of five or ſix ſods: the moſt common ſize of the ridges is five ſods; the turned ſod is about a foot, or rather leſs, in breadth: the drier the ground, the broader the ridges are often made; ſo that they occaſionally vary from four ſods to ſeven or eight.

'Ley ground is ſometimes not broken up until March, croſs-ploughed in June and July, harrowed in October, or as ſoon as it is convenient after harveſt, then ploughed, and, with another harrowing and ploughing, the ſeed is ſown.

'Good ley ground, however, has often been ploughed up at midſummer, croſs-ploughed and harrowed at Michaelmas, immediately ploughed again, and the ſeed ſown as uſual; one of the fineſt crops near Kilkenny, in 1801, was upon ground that had been mown the year before, the grain ſown on the back of the ſod, and trenched.

'When the ground receives a regular fallowing, the farmer ought to have a great crop, to indemnify him for two years rent, and the expence of ſuch a tillage, which, except the laſt ploughing at ſeed-time, is almoſt always performed with four horſes, who can ſeldom turn more than half an acre in a day, and that with great labour; for the ſoil, which is generally a clayey loam, becomes too hard, from being baked in the ſun, to be eaſily divided by an ill-conſtructed plough; if rain has preceded the ploughing, the land remains in clods like unburnt bricks, which are ſometimes broken with mallets, or with hurling ſticks, which have a large crooked head. In a few inſtances three horſes have been uſed in breaking fallows, but ſometimes even ſix: leſs than four bullocks are never ſeen on the lighteſt ground on any occaſion.'

Mr Tighe is an advocate for drilling corn-crops, though we rather ſuſpect that the practice cannot be extenſively diffuſed in the preſent ſtate of Iriſh huſbandry. Whether the drilling of wheat, barley, and oats, is an eligible practice, we are not now to diſcuſs; but in one thing we are certain, that the ground muſt be very highly cultivated before it can be introduced with advantage. We have uniformly maintained the propriety of drilling leguminous crops, but have great doubts reſpecting the propriety of extending the practice farther. The ſaving of ſeed, in the firſt inſtance, is not an object, becauſe it is balanced by the extra work required, and the crops ſown in the drill way are aſſuredly expoſed to greater danger than thoſe ſown by hand in the broad caſt method.

The Kilkenny mode of reaping corn is curious. It is executed by men, while women are the binders, which is directly the reverſe of the Britiſh cuſtom. The reaper takes three handfuls ſucceſſively

ceſſively in his left hand, and lays them together, two of which are faid to make a ſheaf. In this way the ſheaves muſt neceſſarily be very ſmall, which, no doubt, is preferable to the cuſtom of making large ſheaves, as followed, though very unwiſely, in many places. Six men reap an acre of wheat per day, and three women are required to bind it; but a greater number are neceſſary for barley and oats. Corn is uſually ſtacked in the field the day after it is cut (a cuſtom very prevalent in Great Britain about fifty years ago), removed home when properly winned, and built in large ſtacks. A few farmers mow their ſpring corn, but the ſickle ſeems generally uſed.

Our readers are not unacquainted that potatoes are extenſively cultivated in Ireland, but perhaps they are not aware that the lower ranks are almoſt wholly ſupported upon this root. It is ſtated, in this work, that a family of five perſons will conſume three ſtones of potatoes per day through the year, which is an extraordinary quantity indeed. They are eat with milk when it can be got; at other times, with a herring, and often ſimply with ſalt. Oat-meal appears to be ſeldom uſed; or rather, as an honourable gentleman ſapiently remarked, at a Scots county meeting, it is conſidered as a luxury; nor bread of any kind, when potatoes can be be got. No wonder, then, that Britain is deluged with oats, when the rate of markets permits a free importation to be made.

In deſcribing potatoe-huſbandry, the author does not convey much new information to us, and we were diſappointed at finding the curl ſcarcely mentioned. The mode of culture is principally with the ſpade, ſometimes in drills, and nearly the whole manure of the county is applied to this root. Scooping does not ſeem much approved of. An extract from the work will, however, elucidate theſe matters better than a curſory deſcription.

'Scooping the eyes is a practice well adapted to ſave food in the years of ſcarcity; but the reſults of the practice have been too various for the farmer to hazard his crop upon; in a dry ſeaſon, and in ground not very well tilled, they are liable, like the ſhoots, to be ſtarved, and, from their ſmallneſs, they require more attention in ſetting. From their form, however, they might be ſown by a drill-machine, which would ſave much labour. By planting ſcooped eyes, Mr Robert St George ſaved eight barrels in twenty, out of a mixture of large and middling ſized potatoes: the produce in a ſquare perch was ſeven pounds ſuperior to the common ſets, in ground well tilled and fine. Mr Sheckleton, of Caſtlecomer, tried them in 1800 and 1801; his ground was rich and well manured, adjoining to, and perhaps formerly a part of the church-yard: in the firſt year he ſaved half the weight of the potatoes, in the latter, three-fourths: he found them anſwer ſo well, that

he refolved to purfue the method always: he planted fhoots at the fame time, which failed on account of the dryneſs of the feaſon. Scooped eyes plant a greater quantity of ground than the ſame potatoes cut into ſets, each eye being ſcooped out ſingle; common cuts have often two or three. To try the effect of ſmall ſets with ſingle eyes, the Rev. Dr Butler cut off the crowns of the potatoes, in which moſt of the eyes are lodged, and by this means ſaved the other half; each eye was cut out, making a ſmall ſet; ſeven acres were thus planted by twenty barrels of potatoes; nothing could be more productive; from twelve ſtone of *Barber's wonders*, the produce was thirty-four barrels; but he does not approve of ſmall ſets, or ſcoops; nor will he ever again plant them: he is convinced, that had not the rain fallen moſt critically, he ſhould have had no crop: he ſuppoſes that there is not ſufficient moiſture in the ſcoop to feed the plant, until it forms new glands: that, in moiſt weather, and in rich ground, the nouriſhment from the ſet may not be required; but in the generality of ground, in dry weather, the plant cannot thrive unleſs it has glands to ſupply it with moiſture at firſt. Add to this alſo, the plants being weaker are more liable to be attacked by the red worm, as was obſerved in ſome places.'

Several very intelligent communications reſpecting the mode of culture in various pariſhes are preſented; but we are ſorry that it is altogether out of our power to make extracts. Perhaps, on a future occaſion, we may lay ſome of them before our readers.

The courſes of crops uſually followed are far from being perfect, and one general ſucceſſion ſeems to be attempted, viz. fallow or potatoes, wheat, barley, on the beſt grounds, where the farms are large; and, in the ſmall farms, fallow is altogether omitted, and no corn ſown but after potatoes. In the poorer grounds, oats are ſubſtituted for wheat, and potatoes and oats are raiſed alternately for 14 or 16 years, when the ground is *let out* to graſs. In the wheat diſtrict, there are lands that have been cropped from time immemorial; and from ſome of them a crop of potatoes and five crops of corn are taken after one manuring. Our author feelingly cenſures ſuch abſurd management.

He ſays, page 279, 'According to the preſent management, particularly in the wheat diſtrict, the ſoil continually decreaſes in value, and the crops in goodneſs; lime, the only manure uſed in any quantity, diminiſhes greatly in effect every time it is applied; the greateſt part of the farm, which is *let out* (left in graſs), is rather waſte than paſture, and for many years totally unprofitable, after having been exhauſted; no ſtock is kept to make manure; no meadowing produced; the hay, even for the horſe-team, is bought, at a great price, from the low grounds, that cannot be tilled, near

rivers, or from gentlemen whoſe demeſnes are appropriated to this purpoſe.

Huſbandry-implements are far from being perfect. An old-faſhioned clumſy plough, drawn by four horſes, and ſometimes by ſix, very like the old Scotch plough, is ſtill in uſe; but we are glad to obſerve, that SMALL'S improved Rotheram plough has found its way into the country, and truſt it will ſoon come into general uſe. This implement, which makes better work than any we have witneſſed, ſeems here to be provided with a chain, which indeed, for many years, was an appendage to it in our own country. It is now, however, generally laid aſide, from a conviction that it was an unneceſſary addition; wheel ploughs are alſo partially uſed. Rollers are nearly unknown; and, ſtrange to tell, "there is not a thraſhing-machine in the county, though it abounds with ſtreams in moſt parts calculated for water-wheels of every kind!"

We obſerve nothing particular in the ſection upon *Stock*, nor are we diſpoſed to think that much information, either on breeding or feeding, can be gathered from the practice of this county. We notice that milk cows are often kept out during the whole winter, and foddered with hay, which is thrown on the ground to them. This is a ſlovenly and moſt waſteful practice, which ought to be prohibited by every landlord. The ground gets an imperfect manuring to be ſure, but is more injured by the poaching of the cattle, than benefited by the manure. So far the landlord is evidently concerned; the waſte of hay may be thought to be the tenant's buſineſs, but, if the tenant waſtes his hay, how can he pay the landlord his rent?

We obſerve, with much concern, that the uſe of green crops is almoſt unknown among the common farmers, but that their culture is aſſiduouſly attended to by a few reſpectable gentlemen. In theſe matters, Ireland, at leaſt this part of it, is little farther advanced than what Scotland was fifty years ago.

Farm-houſes and offices appear very incomplete. Indeed they mark, in the ſtrongeſt ſtyle, the little progreſs made in rural improvement. We lay it down as a truiſm, that the ſtate of farming, in every county, may be recognized by the condition of the buildings ſet apart for agriculturiſts. Hear what the author ſays on this ſubject.

'Farm-houſes are generally built of ſtone, but oftener cemented with clay than with mortar; ſome inferior ones are of mud, or of ſods, and ſome few have the foundation, or the lower part of the walls, of ſtone, the upper of ſods. Some of the beſt farm-houſes are flated, and this improvement has increaſed latterly; but for the moſt part they are thatched; ſome may be comfortable, but few are neat or cleanly. A decent houſe, let to a com-

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mon farmer, becomes in a year little better than a pig-ſtye. The houſes of rich farmers are generally far inferior to their means, and are ſuch as exempt them from window-tax, and often from hearth-money; but the greateſt failing is in the offices: the barn is generally a ſhed to threſh on, with no floor but the natural ſoil; the ſtable a hovel; a cow-houſe is often not to be found; no yard is appropriated to pigs; the corn ſtands alone to mark the farm: a ſhed to protect the implements of tillage was never thought of; the richeſt farmers always leave the plough and harrow in the corner of the laſt field they tilled; ſuch part of the harneſs as may not conſiſt of gads, or ſugans, is ſecured in the houſe; and with the ſmaller farmers, if the car does not ſtop ſome gap, called a gateway, it may lie againſt the ditch, or on the dunghill. The offices are ſometimes covered with potatoe-ſtalks, which form a very bad thatch.'

'The bad ſtate and deficiency of agricultural buildings, and the unimproved condition of many farms, may ariſe from various cauſes; firſt, nothing is ever built or repaired by landlords; theſe expences, as well as every other improvement, is left to the tenant, who generally comes into a delapidated holding, without capital enough to ſtock it, ſtill leſs to build, to fence, or to drain. Secondly, there is often a want of confidence between the proprietor and the occupier. Thirdly, there is generally in the tenant a diſpoſition to make that anſwer again, which anſwered in ſome degree before; and, if it fails, to look for a temporary ſhift, which he thinks will "do well enough." To attempt diſcuſſing the primary cauſes of theſe two latter impediments to improvement, would be to enter into political not ſtatiſtical obſervation: if the landlord appears ſometmes not to give prudent attention, or an intelligent and liberal ſuperintendence, the tenant appears to want ſettled views and a contented diſpoſition. To deſpiſe the goods in his power may be philoſophic; but it is the philoſophy of a cynic. True philoſophy aims at progreſſive improvement; without that deſire, man becomes brutal, and loſes the only good quality of a rational being.'

The moſt prevalent tenure on which land is occupied by tenants is 31 years, or three lives, which our author conſiders not to be beneficial; and in this idea we concur with him. Life-renters of land, like proprietors who poſſeſs under ſtrict entails, ſeldom make any improvements, conſequently ſuch tenures are hoſtile to the public good.

Our author is unfriendly to the tithe ſyſtem, and, like every other man who has examined the buſineſs with attention, and is not intereſted in continuing the abuſe, thinks a collection of tithes in kind, or an annual valuation, injurious to agriculture.

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We shall conclude our review of this interesting publication with the substance of his sentiments on this obnoxious burthen.

'Tithes are usually paid by composition: the articles paid for, and their usual rates at present are, *wheat* and *bear* 10s. per acre; *barley* 8s. to 9s.; *oats* 5s. to 8s.; other corn in proportion; *potatoes* 10s.; *meadowing* 4s. to 8s.; *rape* 12s. to 14s.; *sheep* (for wool) 3d. per head, including lambs; *lambs* 6d. a piece; *oziers*, for twenty-five acres in Fiddown, five guineas, the only instance of their being tithed; the tithe now is valued higher. Tithe is sometimes demanded by proctors for *orchards*, *bees*, *turnips*, but not paid.

'The demands for tithes vary at the will of the proctor or incumbent: in the parish of Callan, 8s. is paid for wheat; in Dungarvan, 15s. or three crowns, was demanded in 1801; wheat and potatoes have in general risen since 1797, in the barony of Gowran, from 8s. to 10s.; barley from 6s. to 8s.; meadow from 5s. to 6s.; the poorest oats in Idaugh were charged 3s. Potatoes are sometimes not charged to rich farmers in Gowran, who have much corn; but the tithe of potatoes falls chiefly on the poor cottiers, who pay by the perch, sometimes the full value. In the district of Freshford, some cottiers said they permitted their tithe to be drawn rather than pay the demand, which was above the value. Tithes are not very often taken in kind; but the proctors sometimes delay their valuation, which obliges farmers to keep their corn on the ground to its great injury; this has been complained of, particularly in the union of Kilmacahill, where repeated notices have been given to the proctor in vain.

'Though the clergy in general are reasonable in their demands, yet, when tithes are left to proctors, or let, or are (which is the greatest abuse) in lay hands, many local complaints must arise, too numerous to repeat or detail: the poor man will pay the proctor his demand, rather than be cited to the bishop's court, or than keep his corn on the ground when the grazing of his stubbles are necessary to him: many such local instances might be stated; but, being partial, are better omitted. In this county, tithes are a greater cause of complaint than in others, as it is almost the only part of Leinster in which tithe is demanded for potatoes, which seems unreasonable, as few counties have more corn. Hence tithes, whether they are a real grievance or not, have always been the pretence for disturbance; hence the prevalence of *white boys* some years ago; hence the farmers seem to consider themselves scarce affected by any other grievance: it is the first object in their minds; and more so here than in many other places, as the inhabitants and rich farmers are almost all Roman Catholics, who think it hard to support two establishments, and pay for a worship from which they receive

receive no benefit. When the subject, therefore, was agitated in parliament, this county was the first to petition against tithes in 1787.

'The tithes are usually valued by the proctor after harvest; sometimes he meets the farmers at public houses, another source of evil, to settle with them: sometimes the incumbent agrees himself; the farmer then quits his work to go to him repeatedly, and, by various stories, tries to circumvent the clergyman, whose time is taken up in making bargains. The tithes are paid half-yearly, in November and May; the incumbent often takes notes, and is sometimes not entirely paid for two years.

'All reasonable clergymen, seeing these disadvantages, wish for another mode of payment; and if the tithes were sold, at a moderate valuation, to those interested in them, a fund might be established, not only sufficient to pay the clergy more than their present incomes, but to purchase glebes; and such a scheme appears no less easy than desirable.

'Every incumbent should be provided with glebe sufficient to supply his house, and with a glebe-house fit for a gentleman to reside in; then the miserable excuses and shifts made to avoid residence would be done away; and the pastor would be an example to his flock, not only in morality, but in agriculture. In England commutations for tithe have been suggested by some of the heads of the church, as the Bishop of Lincoln; the payment varying according to the price of corn.

'Some lands, anciently monastic, are tithe-free; such are Aghnamult, Sheestown, Kilree, Kilfera, in all about 4000 acres, in the union of Burnchurch. Such are some lands in the parish of Graigue, and others: the value of these lands is high, and they are generally well improved.'

An appendix, containing some important papers on the subject of canals, &c. is subjoined. A very distinct map of the county is also given, which is an useful appendage.

On the whole, we are well pleased with this statistical survey. It displays a considerable degree of information on rural matters, and proves that the author has the real interests of his country at heart. We would, however, recommend to those, who may be employed in similar inquiries, to study brevity as much as possible; for, were all the thirty-two counties of Ireland to be described in the like copious way, an ordinary reader would hardly be able to examine them during the period in which our globe makes its annual revolution. N.

BRANCH

# BRANCH III.

## AGRICULTURAL INTELLIGENCE.

THE flouriſhing ſtate of Scottiſh huſbandry having of late excited much inquiry among our ſouthern neighbours, we are induced to open the intelligence department of this volume with a retroſpective view of the cauſes which contributed to place the country under its preſent happy circumſtances. Though moſt of them are of ancient ſtanding, yet it is but of recent date that they have operated and produced beneficial effects. So true it is, that the wiſeſt law, in many reſpects, may be conſidered as a dead letter, till it is blown upon, or brought into action; then, all at once, it ſprings into life, and diſplays the wiſdom and foreſight of the ſages who enacted it.

Agriculture long remained imperfectly underſtood in North Britain; but, ſince the middle of the eighteenth century, this ſcience has rapidly advanced towards perfection. In ſeveral of the low-land diſtricts, it is now carried on in a ſtyle equal, if not ſuperior, to that of the moſt favourite Engliſh counties, and over the whole country extenſive improvements have recently been executed. In this leading article, we ſhall preſent a haſty ſketch of the ſtate of Scottiſh huſbandry during the laſt century, and point out a few of the cauſes which have contributed to place the firſt of the arts upon its preſent reſpectable footing.

The feudal ſyſtem prevailed in Scotland longer than in the ſiſter kingdom, and its effects placed the cultivators of the ſoil in the moſt abject and dependent ſtate. Men of enlarged minds, or thoſe upon whom liberal ſentiments operated, avoided a profeſſion upon which contempt and poverty were neceſſarily entailed: hence the tenantry were generally ignorant of or unacquainted with the principles of the ſcience which they followed, and of the practices not only of other nations, but even of the conterminous diſtricts. Indolence likewiſe prevailed in a remarkable degree, and of courſe every branch of rural labour was executed in the moſt ſlovenly manner. So late as the beginning of the eighteenth century, ſummer fallow was unknown, at leaſt it was unpractiſed in Scotland, though this radical improvement has been prevalent among our ſouthern neighbours ſince the period of the Roman invaſion.

Fortunately for Scotland, a few men of ſuperior abilities contemplated

templated with concern the deplorable ſtate of huſbandry, and exerted their endeavours to remove the obſtacles which ſtood in the way of an improved practice. *Fletcher of Salton* paved the way; *Cockburn of Ormiſton*, and *Hope of Rankeillor*, immediately followed; and *Lord Findlater* and *Lord Kaimes*, with the true ſpirit of patriots, finiſhed the edifice which theſe worthies had ſo nobly founded. At the beginning of the century, ſhort leaſes were granted, rent was generally paid in kind, which is always a ſure proof that the tenantry are oppreſſed; improvements were hardly known. The ſyſtem of infield and outfield prevailed in its full extent. Sown graſſes were not uſed. In a word, the proprietors received little rent; the tenantry were poor and miſerable; the country, except in a few inſtances, was little better than a barren waſte; and bankruptcies among rural practitioners were then as frequent as is now to be found among the trading and manufacturing intereſts.

To improve the country under theſe circumſtances muſt, it is obvious, have been an arduous taſk; but the means deviſed, though ſlow in accompliſhing the wiſhed-for effect, yet, being founded in wiſdom, have now fully produced the expected benefits. Long leaſes were offered to ſuch as would accept them, (for, ſtrange to tell! ſo ignorant were the tenantry, that they even queſtioned the advantage of ſuch tenures), moderate rents were demanded, and every kind of haraſſing reſtriction was given up. Under this liberal ſyſtem, the face of the country gradually changed for the better. Improvements of every kind, now when ſecurity was granted for reaping the fruits, were cheerfully undertaken by the tenantry. This threw capital into their hands, and ſtimulated additional exertions. Others gradually adopted a ſimilar ſyſtem; and, before the end of the century, almoſt the whole of the lowlands of Scotland might be conſidered as more highly cultivated than any other country with which we are acquainted

It muſt be remarked, that the legal polity of Scotland is highly favourable to the cultivators of the ſoil. By a regulation made in 1629, tithes were in fact annihilated, at leaſt ſo far as concerns the tenantry, while the burden of ſupporting the poor is ſcarcely felt, not amounting to a halfpenny in the pound of real rent. A judicious law, reſpecting the diviſion of waſte and common land, was alſo enacted in 1695; and other laws had been previouſly paſſed by the Legiſlature for ſtraighting marches, and aſcertaining the mode of encloſing betwixt conterminous proprietors. If a ſingle cauſe of complaint remains, it is occaſioned by the reſtriction ſtill enforced againſt ſubſetting land. It is evident that the retention of this feudal remnant does not promote the intereſt of proprietors in the moſt diſtant degree, while it operates, in many

cafes, againſt improvements. The old feudal rule, that a vaſſal could not be received on an eſtate without the conſent of the ſuperior, is now happily aboliſhed; and it ſeems ſtrange that the power exerciſed by proprietors, of preventing any perſon from poſſeſſing land without their conſent, ſhould ſtill be retained. The caſes are exactly the ſame in principle, and the welfare of the country is more concerned in the abrogation of the rule as applying to tenants than vaſſals.

Having given this haſty ſketch of Scottiſh huſbandry in the preceding century, we ſhall detail, as concifely as poſſible, the ſtate of huſbandry during the year 1802, and more particularly at the preſent time.

The year 1802 was, in ſeveral reſpects, uncommonly favourable for executing rural labour, and perhaps the country has ſeldom experienced better ſpring and autumn quarters than in this year. Clay ſoils wrought in a ſuperior way, at ſeed-time, to what commonly happens; and the wheats, from being well rooted, received little damage from the cold winds of April and May. The ſummer quarter was, however, unpropitious to the growth of corn and graſs, and ſerious apprehenſions were at one time entertained, that the grain crops would prove defective. Theſe apprehenſions proved, in a great meaſure, unfounded, for the warm weather in Auguſt and September ripened the grain of the ſouthern diſtricts in the completeſt manner. Except a partial loſs from ſhaking winds and ſevere froſts, in September and October, the crop was ſafely harveſted, and brought into the yard in excellent condition.

Whether the laſt crop, taking it upon the great ſcale, equals an average one, is a problematical circumſtance. In a few diſtricts, ſituated on the eaſtern coaſt, the crop is unqueſtionably good; but, in the weſtern and northern parts of the country, owing to the coldneſs of the weather in the ſummer months, it is conſidered to deſerve a different character. The rate of markets, and the great importation of foreign grain, ſupport the idea that the crop is below the conſumption: but the corn-trade, for ſome time paſt, has been carried on upon ſuch diſcordant principles, that it is ſcarce practicable to draw juſt inferences from the extent of imports and exports. The country muſt be fully ſtocked, before old principles can be acted upon; and that a full ſtock in hand is not yet gained, muſt be obvious to the moſt ſuperficial inquirer.

The prices of grain through the year have been fully as high in the ſeveral Scottiſh markets, as in Mark-lane, and ſtill keep in uniſon with thoſe of the metropolis. Good wheat, weighing from 63 to 64 lb *per* Linlithgow firlot, (about 3 *per cent.* larger than the Winchester buſhel), ſold lately as high as 32s. a 33s.

but is now down to 28s. *per* boll of four firlots. Inferior ſorts, from 22s. to 26s. It deſerves attention, that the thick-chaffed wheats are generally very defective in quality, and that the principal ſamples are all of the thin-chaffed varieties. This has occaſioned the ſowing of the former ſorts to be almoſt diſuſed this ſeaſon, though, till lately, they were held in the greateſt eſtimation.

Markets for fat and lean ſtock have experienced no reduction, and it is ſuppoſed that the quantity of ſheep and cattle, in North Britain, is much leſſened within theſe few years. Be this as it may, the demand is equal to the number preſented, which neceſſarily occaſions the late high prices to be fully maintained. The taſte of the public, in favour of butcher-meat, ſeems daily to increaſe; and it is with pleaſure we remark, that a very general attention is now paid to the improvement of ſtock in every quarter of the country. The increaſed value of the article has occaſioned this ſuperior attention; and it is to be hoped, that improvements in this line will ſoon be placed upon a footing that will enable the breeders to keep their ground, in the event of a declenſion of markets. Fat cattle and ſheep at preſent are worth 10s. 6d. per ſtone, of 16 lb Amſterdam, or 17½ avoirdupois.

The turnip crop has in general ſucceeded this ſeaſon, and yields richer and more nutritive food than thoſe of the three preceding years. This valuable root is now extenſively cultivated in every quarter, and is eminently uſeful upon moſt of ſoils. Perhaps a ſenſe of its value has lately cauſed a more general culture than conſiſtent with the real welfare of agriculture. Upon all ſandy and dry ſoils the turnip huſbandry is truly beneficial; but where the ground is inclined to clay, or incumbent upon a cloſe bottom, it does not require argument to prove that the cultivation of this root is accompanied with a certain loſs to the owner. A clean ſummer fallow is the only mode that ought to be practiſed under theſe circumſtances; and it is now aſcertained, beyond diſpute, that the firſt crop, after this fallow, is of greater value than both the crop of turnips, and the ſucceeding crop of grain, even when every branch of management is, in other reſpects, conducted in the moſt huſbandman-like manner.

Since harveſt was finiſhed, the weather has proved unfavourable to the ſowing of wheat, and to the ploughing of the ground for the next crop. The rains have, however, been partial, and rather of that extent as to render the ſurface wet, than to fill the bowels of the earth with water. The fallow wheats were in general ſown during the months of September and October, and lately preſented a promiſing ſhow, though now checked by the recent froſts; but the bean ſtubbles, being late of clearing, were not ſown under favourable auſpices. Many of them are yet unſown, and ſe-

veral fields were only ſown about the end of laſt month. Spring wheat is now very common in the early diſtricts, and, in dry warm ſeaſons, has often been cultivated with advantage. Where the turnip-huſbandry is general, this mode muſt neceſſarily be followed, or the alternative adopted of ſowing upon clover-ſtubbles. Repeated trials have, however, aſcertained, that the culture of oats, after the clovers, is more beneficial than that of wheat. Acting upon this principle, ſpring wheat is uſually ſown after turnips in many counties, and the grain ſo produced is often found ſuperior to what is ſown in the autumnal and winter months.

We obſerve that meetings of the landed intereſt have been held in ſeveral counties, to take under conſideration the additional duty impoſed laſt year upon malt. In all former bills, a leſſer duty was impoſed upon barley and bear, manufactured into malt in Scotland, than in England; and it was ſuppoſed that this diſtinction was founded upon juſtice and expedience. That ſome diſtricts in Scotland raiſe barley, equal to what is uſually produced in England, we are diſpoſed to admit; but in the northern, and particularly in the weſtern diſtricts, where the climate is late, and *big* or *bear* generally taken inſtead of barley, an equal tax is undoubtedly a grievous oppreſſion. Notwithſtanding of the numerous and beneficial improvements which have taken place in theſe quarters, yet none of them can poſſibly meliorate the climate, which remains cold and wet, backward to vegetation, and unfriendly to the harveſting the article upon which the duty is to be levied. A departure from the ſyſtem of taxation, maintained ſince the union, forms the cauſe of complaint made by the different counties; and, in our humble opinion, it deſerves ſerious attention. We are glad to ſee landed proprietors take up ſuch matters, for they lie particularly within their province; and, through their endeavours, the wiſhed-for redreſs can only be obtained. We ſuggeſt the propriety of permitting Engliſh barley imported into Scotland, and manufactured there, to be taxed in the ſame ratio, as if it had been malted in England; and to this meaſure no well-founded objections can be urged. Indeed an equal malt-duty, in this caſe, would prove highly beneficial to Scottiſh huſbandry; the ſuperior quality of Engliſh grain, eſpecially in ſeaſons like the laſt, gives it a decided preference in all the northern counties, and makes home raiſed-grain meet a market under a poſitive diſadvantage. This ſubject is well elucidated in the Fife and Moray reports, and in the Glaſgow letter, of intelligence preſented in pages 120, 121, and 122, of this number.

We ſtate with pleaſure the continued and increaſing endeavours of the FARMING SOCIETY OF IRELAND, to benefit the huſbandry of that country; and, in the inſtance we are now to mention, the good

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of their inquiries muſt be univerſally felt. This veteran ſociety, in order that the moſt valuable breeds of cattle and ſheep may be accurately aſcertained, have lately offered two premiums of *one hundred guineas each*, and two of *fifty guineas each*, for the two beſt and ſecond beſt eſſays on the reſpective properties of theſe animals, which contribute moſt to their utility. By ſuch liberal offers, it may be expected that every ſpark of knowledge, in the country, of theſe matters will be brought to light; at leaſt a conſiderable body of information muſt be collected. The trifling premiums of five and ten guineas, held out by ſome other ſocieties, cannot form an object to men of ſcience and character In fact, even when gained, they can hardly be reckoned a remuneration of the trouble and expence actually incurred in making the neceſſary inquiries, and arranging the reſults in a ſyſtematic ſhape.

We ſhall conclude this article, by remarking, that, upon the whole, the ſtate of huſbandry, at the end of the year 1802, muſt be viewed as beneficial to the country, advantageous to proprietors of land, and honourable to the occupiers. The produce of the country is undoubtedly augmented in a conſiderable degree; rents paid to proprietors are amazingly increaſed, while the ſituation of cultivators is flouriſhing and proſperous. It is to be hoped that the like favourable circumſtances, as have occaſioned ſuch important advantages to all concerned, will not in future ceaſe to operate; and that, under the influence of a juſt ſyſtem, and the ſecurity of equal laws, thoſe parts of the kingdom which remain unimproved will ſoon be brought into the ſame profitable ſtate as thoſe more early cultivated *.

*January* 23. N.

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* A conſiderable part of this article is taken from an agricultural report drawn up by the conductor of the magazine for a London monthly publication: but as that work would reach few of our readers, we judge there can be no impropriety in preſenting the ſubſtance of it here.

*EXTRACTS*

## *Extracts from Private Correspondence.*

## SCOTLAND.

### *Inverneſsſhire Quarterly Report.*

Our crop was, on the whole, better ſecured than could have been expected, from the extreme wetneſs of the latter part of the autumnal ſeaſon; but it was Martinmas before the whole was got into the ſtack-yard. The produce, as to quantity, I believe, will equal that of an average crop; but the quality is very inferior, owing to the great want of ſunſhine during the Summer months. Except for barley, there is no demand at preſent for any ſort of grain; and the large importations of that article from England, and various parts of Scotland, have, within theſe few days, glutted our market completely. Beſt Norfolk barley has been offered ſo low as 27s. 6d. per boll in quantities; but, for ſmall parcels, 30s. may ſtill be brought; inferior qualities, as low as 24s. As for wheat and oats, I have not yet heard of any of theſe grains being ſold at fixed prices; but oat-meal in retail, brings 1s. 4d. and 1s. 5d. per peck of nine pounds, and barley-meal 1s. 3d. per peck of ten pounds. The weather has been uncommonly mild of late. Until this day, our ploughs can hardly be ſaid to have been ſtopped by froſt. The demand for cattle of all deſcriptions, was very great at the latter end of the ſeaſon; and ſo few are left in the country, that prices are likely to go very high in Spring-time. Winter fodder is very plentiful, and no demand prevails for hay.——*Jan.* 12.

### *Letter from David Sheriff Eſq. dated Kinmylees, near Inverneſs, January* 12. 1803.

'As I conceive it to be very proper, that any thing relative to rural affairs, out of the common train of occurrences, ſhould be circumſtantiated as to place, date and perſon, I therefore give you authority to inſert, in your next Number, the following account of a ewe, which is preſently in my poſſeſſion.

'In the month of March 1801, I bought 225 ewes of the ſmall country breed, ſuch as may be fed to 8 lb. per quarter, which I grazed upon the outfield paſture, and among the woods belonging to my farm. I ſold the lambs produced by theſe ewes, in the month of June following, at 8s. per head, and the ewes, on the 1ſt January 1802, after getting a very few turnip, at 15s. One of theſe ewes, an extreme old one, without a tooth, had a lamb taken off about the 1ſt June 1801, and on the 5th of November following ſhe had a ſecond, which I killed on the 29th December, having refuſed 30s. for it. On the 20th April laſt, ſhe had a third lamb, which I ſold at 12s. along with nineſcore more: and this day, *the 12th January* 1803, the ſame old ewe has dropped a fourth lamb, apparently of a healthy and ſtrong conſtitution; and I have little doubt but I ſhall get 25s. or 30s. for it next month. I have juſt now put the ewe into a houſe to feed with turnip tops and kail, the only food ſhe can now eat, from her total want of teeth.'

*Letter*

*Letter from a Farmer in Roxburghſhire, Jan. 8.*

'SINCE the concluſion of harveſt, we have enjoyed fine open weather till lately, and have been able to get field labour in a very forward ſtate. The graſs lands continued to vegetate with vigour; and I hardly remember of having ſeen the turnips ſo much ſhot, or run, as in this ſeaſon. This, however, is now effectually ſtopped by the froſt, and unleſs this valuable root is injured by a continuance of the preſent weather, we have a proſpect of enjoying a full ſupply of cattle and ſheep meat for a conſiderable length of time.

'I don't think that there is any thing like the uſual extent of ſtock in the hands of the breeders or feeders of this county. Thoſe who had to purchaſe in autumn, were apprehenſive of riſking too much; while thoſe who had ſtock in hand, eagerly diſpoſed of greater numbers than cuſtomary, the prices being ſo extravagantly high. If a good ſupply is not procured, in the Spring, from the Northern diſtricts, it is probable that ſtock will continue to be very ſcarce.

'The great bulk of laſt crop is putting little money into the farmer's pocket; and the grain is ſo inferior in quality, that it cannot be preſented at the London market, oats excepted. It is difficult to quote prices, for we are willing to give it to the corn factor upon his own terms. The perſevering advocates for breaking up graſs land, have ſucceeded ſo far, as to render corn ſcarcely worth the growing, which may prove a fatal circumſtance to the country in after years.'

*Aberdeenſhire Quarterly Report.*

FROM the 14th October (the date of laſt Report) the weather remained very fine for about ten days; ſo that, in the early diſtrict of the county, the different crops were harveſted in a very perfect ſtate. Before the end of the month, the weather broke, and continued ſo long bad, with torrents of rain, as occaſioned the crops which remained in the fields to be almoſt totally ruined. The loſs in many places was very conſiderable; and where there were no thraſhing machines to take out the grain in its wet ſtate, it could not be ſaved by the moſt active efforts.

Barley turned out ſufficiently productive, and fit for malting. It is, however, upon the whole, rather defective in weight. Oats are leſs defective than were expected, though they do not yield ſo freely from the ſtack as we could wiſh. Neither the one grain nor the other is, however, in great demand: the temper of the market does not induce merchants to be hearty in purchaſing, nor the ſcale of prices tempt farmers to be anxious about ſelling.

Cattle and ſheep maintain very high prices. The ſtock of either, on hand, is by no means great; though provender, both of ſtraw and turnips, is very plentiful. In dry ſituations, field work is ſufficiently forward, as there has been little interruption from froſt or ſnow; but, in low lying, or wet ſituations, little labour could be accompliſhed, owing to the humidity of the weather.

Peat

Peat moſs has been ſtrenuouſly recommended as an excellent ingredient in compoſts. In many parts of this county, where moſs is plentifully got, it is found to be conſiderably impregnated with iron ore; in ſome inſtances, to ſuch a degree, as to render it hurtful, nay, even deſtructive to vegetation. *Query.*—How are the qualities of moſs diſtinguiſhable? When mixed with mineral acid, is there any way of purging it of this noxious quality? or, if it cannot be deprived of it altogether, with what proportion may it be uſed advantageouſly? and how is that proportion to be aſcertained?——*Jan.* 13.

## *Roſsſhire Quarterly Report.*

The Winter has continued open, and, in general, the weather has been milder than we have had for ſeveral years paſt at this ſeaſon. Ploughing is well advanced. The ſheep and out-wintering cattle have loſt nothing of their fleſh, and, it is hoped, will reach the graſs time in better condition than uſual. As the ſtraw is not much wanted for cattle, little of the crop has yet been thraſhed. Oats meal poorly; and our diſtillers complain of the barley not giving the uſual quantity of ſpirit. Our corn markets are very dull. Oat-meal from 20s. to 24s. per boll of nine ſtones; but our prices are little better than nominal, a ſmall part of this crop being diſpoſed of. Old Barley, if fine, ſells at 30s. per boll.

There is a ſpirit of improvement gaining ground among the proprietors of this county. Captain Munro of Teaninich, and Captain Mac-Kenzie of Kincraig, have of late marled ground to a conſiderable extent, which promiſes to pay well; and many others are ſpeaking of following their example. Your correſpondent, the Northern Touriſt, will be pleaſed to hear, that the much neglected, and fine improveable property of Fowlis, is now advertiſed to be let on improving leaſes. There are many other tracts of valuable land in the county, alſo propoſed to be let in farms worthy of attention. The rage for ſheep-farming ſtill continues. Hill farms, when let of ſufficient extent for a ſheep-walk, bring three, four, or five times more rent than formerly. Some are of opinion, that this will operate againſt the intereſt of the country, many of the aborigines of the ſoil being thus forced to emigrate: while others argue, and with greater juſtice, that whatever ſyſtem brings the higheſt rent, muſt eventually promote the real good of the community. ——*Jan.* 12.

## *Wigtonſhire Quarterly Report.*

The writer of this Report having lately made a tour through the greateſt part of the county, with much ſatisfaction obſerved the progreſſive improvement of its agriculture, particularly the increaſed quantity of wheat and turnips of late years; the turnip crop being *now* underſtood, not only of itſelf valuable, but an excellent preparative for the ſowing down of the land to graſs: and where the turnip huſbandry prevailed moſt, we invariably found the richeſt paſture. Near to the ſouthern point of this diſtrict, we viewed pretty large fields manured

nured with ſea-weed, whoſe turnips in general meaſured twelve inches diameter.

From the end of November till the beginning of this month, the weather has been rainy: now the froſt has ſet in pretty ſevere, which has not only kept back the ſowing of ſome part of our wheat, but retarded our ploughing very much; on light ſoil, we often find wheat anſwer as well in the end of February as in October.

Our crops, in general, are turning out rather better than we expected in quality, potato oats weighing from 38 to 40 lib.; common Galloway do. from 34 to 37 lib.; beer from 44 to 48 lib.; and wheat from 54 to 59 lib.; all per Wincheſter buſhel. Our market is however both dull and low in price, viewed comparatively with the extraordinary advance, of late years, on land-rent, price of labour, &c. &c.

The price of butcher meat has continued pretty uniform. Lean ſtock, and young cattle and horſes, during this quarter, have continued much higher in price than at any period during the late war.

One great cauſe of the price of grain keeping low is, the vaſt Iriſh importation into Clyde, and weſt of England; but which, being now rather falling back, it is thought, by ſome people, the market will ſoon become better.——*January 17th.*

## *Dumfrieſſhire Quarterly Report.*

The ſeaſon, ſince laſt Report, has been as favourable as could be wiſhed for carrying on farm labour, and preparing for the enſuing crop. The lands intended for green crops have got a furrow, and many farmers are well forward in ploughing their lea lands. None are behind but ſome few old-faſhioned people, who were bred, and remain in the idea, that all land is injured by being ploughed before Candlemas. Theſe, however, it is hoped, will ſoon be ſtill fewer in number than they are. Such of the ſmall fields of wheat ſown in this county, as were got early in, are promiſing. Thoſe ſown ſo late as November were long in coming up, and appear very feeble. The quantity ſown ſeems rather more than uſual.

The crop of laſt ſeaſon is turning out, as was expected, rather below an average. Wheat is generally unſound; whether blighted in the flower, or by the froſt in the beginning of September, is not certain; likely both. Barley is firm, but light, weighs from 48 to 50 lib. the buſhel. Oats, common kind, 36 to 37 lib. Early oats rather better. Potato oats 42 lib.

The after growth in the Autumn, and the open moderate Winter months, have improved ſtock of all kinds. Many young ſheep, indeed, have died of the diſeaſe called *the ſickneſs*; but that is a mark of the ſtrength of the ſtock, generally being occaſioned by an over fulneſs or richneſs of the blood. Prices, ſo long as there were markets, increaſed to the laſt, particularly for cattle. How they will open in the Spring, is a matter of doubt; though, by all accounts, cattle are yet in numbers unequal to the demand, particularly aged cattle. Pork in carcaſe, for drying, was, in November and December, from 7s. 6d. to 7s. the ſtone

of 14 lib.; but is now from 5s. 6d. to 6s. 6d. The cauſe of the fall of this valuable article is not yet underſtood. The buyers of laſt year, at prices from 8s. to 10s. the ſtone in carcaſe, were thought, in the end, to have done very well.——*Jan.* 17.

*Letter from a Gentleman near Perth, January* 18.

'In this part of the country, the ſtate of the weather, from the cloſe of Harveſt till within theſe ten days, has, on the whole, been favourable to rural labour. The uſual autumnal ploughings were given, and even ſome people ploughed light lands for oats; a practice which ſuits ſuch ſoils well, by allowing the ground to be conſolidated before ſeed time, conſequently reſiſting the Summer drought with greater vigour. The open weather has permitted every advantage to be got from the paſtures and clover ſtubbles, and benefited the growers of turnips. Stock of all kinds is ſtill high, and I preſume will continue ſo during the enſuing Spring.

'The young wheats look well in general. In this neighbourhood, we ſow rather early than otherwiſe; ſeldom or never truſting to a late or ſpring ſowing, as is done in the ſouthern counties. I am convinced our practice, in this reſpect, is conſiſtent with our intereſt; for, from local circumſtances, we ſeldom experience the comfort of genial Spring weather. While on this article, I may mention a ſmall occurrence which happened on my farm at laſt wheat-ſeed time, ſeeing it may caution others from falling into the like error.

'My fallow being in forwardneſs for receiving the ſeed, I was led to buy ſome Engliſh wheat of crop 1801, which, to appearance, looked to be very ſuperior grain; but, from the effects of the urine and hot lime uſed in the pickling proceſs, the braird made was a very imperfect one, ſcarcely one half ſo thick as I had reaſon to expect; and, what was more ſurpriſing, the plants were gradually thinner, according to the progreſs made in ſowing; what was ſown firſt, being thicker conſiderably than what was ſown at the concluſion of the work. From what is ſtated, I preſume to ſuggeſt to all concerned, the propriety of pickling a ſmall quantity at a time; and it becomes a queſtion with me, whether old wheat needs pickling at all. It is probable, ſome of your friends may have ſuch experience on the ſubject, as to ſay whether old wheat does, or does not require pickling; and would any of them communicate their opinion, I, for one, would thank them moſt ſincerely. *

'The

* The Conductor begs leave to aſſure his worthy correſpondent, that wheat of all ages requires to be pickled, in order to preſerve it from ſmut; though there are numerous inſtances of the diſeaſe being avoided, even when the proceſs of pickling had been neglected; but no prudent man will run ſuch a riſk, the loſs ſuſtained in one fatal year, being often greater than the expence of pickling during a whole leaſe. Our correſpondent had allowed his wheat to remain too long among the urine, which is always attended with fatal conſequences.

'The grain crop of laſt ſeaſon turns out, for the moſt part, of very inferior quality, and the demand for it is unuſually ſlack. The ſcale of prices is not at all agreeable to the grower, nor conſiſtent with the rate of rents, and the expence of labour; but, ſtill, the greateſt evil is the want of demand.'

*Tweeddale Quarterly Report.*

THOUGH the weather took an unfavourable turn in October, yet ſufficient intervals were found to finiſh the harveſt in a ſatisfactory manner. Other circumſtances, however, contributed to place the rural matters of this diſtrict in a more unfavourable ſituation than could be wiſhed. The potatoes, and all the crops in low grounds, were much injured by the early froſts of September; and when it is added, that a ſevere ſhake took place on the higher lands in the beginning of October, it may ſafely be reckoned, that our crops are remarkably unproductive. It is difficult to calculate the general produce, as, in all high climates, there is a greater irregularity in backward ſeaſons, than where the ſoil and climate is more uniform. Many of the oats do not yield more than eleven pecks of meal per boll. Beer is far from its uſual quality; and peas are ſcarcely worth the expence of thraſhing.

As the weather continued freſh and mild after harveſt, conſiderable progreſs was made in executing field labour; and, from the ſame cauſes, the fog and turnip feeding have turned out to good account. Moſt of the turnips were ate with ſheep; as cattle, for the purpoſe, could not be got, but on the moſt extravagant terms.

For ten days paſt, a ſevere froſt has prevailed, which will no doubt hurt the turnips that remain unconſumed. Grain, meal, and butcher-meat are at much the ſame prices here as in the Edinburgh markets.

18*th January.*

*Letter from a Gentleman in Aberdeenſhire—January* 19.

'Our harveſt was, in many places, concluded moſt unfavourably. Near Ellon, a great quantity of oats were expoſed to the rains of the latter end of October, and the ſubſequent month, and were not got ſecured till the end of December. In the diſtrict of Alford, a gentleman had a great part of his crop, on a large farm, almoſt deſtroyed; and, at the head of the county, betwixt Huntly and Keith, many fields were uncut, or ſtanding out, when December arrived.

'The turnip crop ſtands the Winter, as yet, very well, not having experienced much froſt. We had a little ſnow ſome weeks ago. A regular ſtorm ſeems now to have ſet in; but the ploughing of wet ſoils was completely ſtopped long before it commenced.

'Too much pains cannot be uſed in cautioning farmers againſt the uſe of froſted ſeed. The froſt of 13th September, hurt only the low country crops; but later froſts injured thoſe of the higher diſtricts more ſeverely.'

### *Berwickſhire Quarterly Report.*

THOUGH the rainy weather, in the beginning of this quarter, was much againſt the ingathering of that part of the bean crop which remained in the field, yet, where proper precautions had been taken, the grain does not appear materially damaged. Fallow wheats made a promiſing braird; but the bean lands were too late in clearing, and too wet to admit of being ſown with wheat before Winter ſet in. The long continued rains were particularly unfavourable to ſheep in ſituations any way liable to the rot; and that diſeaſe, known in this county by the name of the *black ſpauld*, (from its terminating in a mortification of the hind quarters), has, in ſome ſituations, been very fatal amongſt the calves of laſt year: thoſe calves that are higheſt in condition ſeem moſt ſubject to this diſorder, which (like the rot in ſheep) appears to be in ſome meaſure local, and always moſt prevalent in a mild wet ſeaſon. If any of your readers have diſcovered a cure for this diſeaſe, or the means of preventing it, they would confer a benefit on ſociety, by making it known through the channel of your Magazine.

The markets for lean cattle at Martinmas were higher than ever remembered, being conſiderably above the prices of laſt year. Late turnips have ſenſibly improved ſince the commencement of this quarter, while the early fields have univerſally ſhot up into the ſeed ſtalk; the letting price for thoſe of the beſt quality has been from 3l. 10s. to 4l. per Engliſh acre. Ploughing is in a very forward ſtate, having met with little interruption from froſt till within theſe eight days.

Wheat turns out greatly below an average crop, and the general quality is ſo indifferent, that few fine ſamples are to be met with. Oats, though they meal tolerably well, make but a very middling return per acre. Barley is ſmall in the grain, and will hardly yield an average return. Beans, except where they have been thraſhed for the purpoſe of being kiln-dried to make them keep, have ſcarcely yet been ſeen at market; but from theſe trials the crop does not promiſe to turn out productive. Peas are hardly worth eſtimating. Our corn markets have been gradually declining ſince November. The preſent prices are: Beſt wheat, 37s. 6d.; ditto barley, 16s.; ditto oats, 14s.; potato oats, 16s. per boll of ſix Wincheſter buſhels. Hay is ſelling from 6d. to 8d. per ſtone of 22½ lib. Engliſh; and potatoes in wholeſale, deliverable at Berwick, at 14s. and 15s. per boll of 40 Engliſh ſtone. Butcher markets have remained pretty ſteady; good beef being 8d., and mutton 7½d per lib. of 17½ ounces. The ſnow which fell on Sunday the 9th, ſtill continues to cover the hills; and though not deep, yet, from its being frozen on the top, the flocks in that diſtrict have required a foddering of hay for theſe ſome days paſt.—*Jan.* 19.

### *Eaſt Lothian Quarterly Report.*

THE weather broke in October, before the whole of the crop was carried; but the loſs thereby ſuſtained was not of much conſequence. In the important buſineſs of ſowing the wheat lands, an obſtruction of greater magnitude was generally felt, and various fields remain unſown, which

which originally were intended for wheat. Such fallows as were ſeeded in September, maintained a flouriſhing appearance when the froſts commenced; and as they were well rooted at that period, little danger is apprehended from the temporary ceſſation of their growth.

The grain markets preſerved a ſteady aſpect till the beginning of this month; but, of late, ſales have been made at prices conſiderably reduced. When it is conſidered that nearly one half of the produce of this county muſt be ſent out of it either in a raw or manufactured ſtate, and that the ports of the conterminous counties were filled with grain imported from England and foreign countries, the declenſion will not excite ſurpriſe. The fact is, prices at Haddington were longer of being depreciated than in other quarters; which is a ſure proof that the quality of the grain, there preſented, is of the firſt ſort. If Scotland had depended ſolely on its own produce this year, a real ſcarcity muſt inevitably have been experienced. The importation of Iriſh oats and American wheat into the weſtern ports, and grain of all kinds from England, and wheat from foreign countries, into the ports on the eaſt coaſt, have, however, prevented an evil which could not otherwiſe have been avoided.

Little alteration has taken place in the butcher markets of late, nor is any expected for ſome time to come. The demand and ſupply has hitherto been tolerably well proportioned, and probably will remain ſo till the concluſion of the feeding ſeaſon. Stock upon turnips have thriven well; and from ſales made, it appears that the feeders will get through, notwithſtanding that purchaſes were made at enormous rates. The month of April is, however, the trying time for the feeders, as the markets are ſeldom glutted earlier.

Ploughing, in general, is not very forward, but equally ſo as laſt year. Upon the wet and heavy lands much time was loſt from the October and November rains; the lateneſs of the harveſt, and the time ſpent in ſecuring the crop, alſo contributed to throw field labour behind. The reduction of prices has not ſerved to check an increaſe of rents; but this may be reckoned a pretty good ſign of the increaſing proſperity of the country.——*Jan.* 21.

## *Mid-Lothian Quarterly Report.*

The mildneſs of the two laſt months has been favourable to the growth of the young wheats, which, before the commencement of the preſent froſt, had a promiſing appearance. The ſame cauſe has permitted ploughing to be, in general, well advanced; a circumſtance of great importance before the commencement of ſevere weather.

The laſt year's crops have turned out, upon trial, nearly as was expected at the time of writing laſt report. The markets are fully ſupplied, and ſales dull; but barley is quite unmarketable almoſt at any price. This is generally attributed to the high additional duty lately impoſed upon malt, which is the ſame, whether barley be good or bad, of Engliſh or Scotiſh growth.

The brewer and diſtiller find it their intereſt to purchaſe nothing but the very beſt grain; and they very readily rather give from 22s. to 24s.

for

for Engliſh barley, than give 16s. for Scots barley: and, it ſeems, this great diſparity in price does not ariſe ſo much from a correſpondent difference in weight, as from the former giving more ale or ſpirits than the latter.

Ought not all thoſe, in every county of Scotland, who are intereſted in the growth of barley, to apply to Parliament for a modification of the malt-duty, as has been the caſe during the laſt century? for it is quite as reaſonable that an act ſhould be paſſed, ordaining all grain of the ſame ſpecies to be ſold at the ſame price, however different in quality, as that equal duties ſhould be impoſed affecting barley of very unequal qualities.

Fat cattle continue to maintain good prices; they give from 10s. to 11s. per ſtone Dutch, ſinking the offal; and, by retail, beef ſells at from 6d. to 8d. per lib.; Mutton, nearly the ſame. Current prices for both, 7d. per lib.

Oats from 10s. to 16s. per Linlithgow boll.
Beans and peas from 13s. to 16s. 6d.
Wheat from 22s. to 27s. Sales dull.
Hay from 7d. to 8d. per Tron ſtone.

Herrings have almoſt deſerted the Frith of Forth this ſeaſon; but cod has been found in conſiderable abundance as far up as Alloa: and many Engliſh veſſels are employed catching them alive for the London market, which is a new thing ſo far up the river.

*January* 25.

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## ENGLAND.

An intereſting communication was received from the gentleman who favoured us with the particulars of the Duke of Bedford's huſbandry; but too late for our laſt Number. Though rather now out of date, we have made a few extracts from it, and truſt they will prove acceptable to our readers.

*Letter from a Scotch Farmer, on a Tour through England, dated Cardiff, Wales, Oct.* 21. 1802.

'I left London on the 21ſt Auguſt, on a viſit to our good friend in Wales, and had tolerable opportunities of examining the huſbandry of the country, betwixt the metropolis and that diſtrict. During the firſt two ſtages, the different corn crops appeared very good; ſome of the wheat was carried, the beans nearly ripe, and the meadow-hay above half cut. From Marlborough to Deviſes, neither wheat nor barley was ripe; and many fields of turnips were not thinned or ſet out. Near Bath, paſture and hay fields are very numerous, little land being under corn crops; and the ſame obſervation may be applied to the country around Briſtol. Both theſe cities appear to have felt the effects of the late war, more ſeverely than other places; for hundreds of fine new-built houſes remain unfiniſhed in both of them; ſome of them apparently

parently in a very tottering ſtate. Between Briſtol and the new paſſage over the Severn, I croſſed a common of fine land, carrying a green paſture, and totally free of ant hills, which cover all the common and waſte land in the South of England. From the new paſſage to Newport and Cardiff, the face of the country is much the ſame as on the Glouceſter ſide of the river, riſing into gentle little hills, which are encloſed and cultivated to the tops. Harveſt was then only beginning, and none was carried. A great many fields were more than fully ripe, and ſeemed to remain uncut for want of hands. Much hay was alſo ſtanding in the cock; and ſome of the ſalt marſhes below Cardiff were uncut. All the reapers in this diſtrict (Wales) are men, and their wages are two ſhillings per day, with victuals. They work two and two on a narrow ridge, cloſe at one another's heels, and lay down the corn in handfuls, which is taken up by women and boys, who bind it in ſmall ſheaves. Barley is uſually cut with the ſcythe, cocked in like manner as hay, and built in long ſtacks.

'The farmers are, at this time (October 21ſt), buſy in ſowing their wheats, which is a buſineſs that occupies a conſiderable part of their attention. On fallow ground, it is put in under furrow, on two-bout ridges; and afterwards gone over with hand-hoes, inſtead of receiving the harrow. On clover leas, they caſt up every furrow with a ſhovel, on the ſides of the narrow ridge, after harrowing; and the ploughing, though very ſhallow, is given with ſix or eight oxen. Our friend has, for ſeveral years, ploughed with two horſes; but few of the neighbours have followed his example.

'The whole country, from the paſſage to Swanſea, is incumbent on limeſtone; and there is abundance of coal in the hills. Few farmers are therefore without lime-kilns for their own uſe. Much of the article is uſed in compoſt middings, generally formed from the head lands and banks of ditches, which is applied to the fallows and clovers for wheat. Not many oats are ſown; and theſe are generally of the black variety. Only a few ſmall fields of turnips are to be ſeen, and ſome of them are not hoed. The iron-works in Monmouth and Glamorganſhires render labourers very ſcarce. The great profits made by the proprietors of theſe works during the war, has occaſioned them lately to be conſiderably extended; and, though the price is leſs, more iron is made than ever. About Morthey, 400 tons of bar-iron, of different ſizes, is manufactured per week. It is brought by the canal to Cardiff, in barges of 20 tons, drawn by one horſe.'

*Letter from a Farmer in Wales, January 11th.*

'We have experienced a remarkable mild Winter, which might have led us to expect a full-grown braird of wheat. But the contrary has happened; for I never ſaw the young plants look weaker in this country than in the preſent ſeaſon; and I attribute this chiefly to the ſmallneſs of the ſeed produced from laſt year's crop, occaſioned by the coldneſs of the Summer months, and the immenſe bulk of ſtraw; circumſtances that render grain always defective. Indeed, our grain, I mean the

the wheats, is ſo light, that when we ſell it by weight (a cuſtom our millers are fond of), we may be ſaid to be great loſers; for it takes an extra quantity to make up the aſcertained weight of a buſhel, though no doubt this mode muſt be conſidered as a better criterion for determining the comparative value of grain, than what is furniſhed by a meaſure of capacity.

'Three months ago, there was a proſpect of cattle markets taking a retrograde courſe; but, at our late fairs, ſmall oxen, ſteers, and young heifers, ſold much higher than at any former time. Store ſheep and pigs alſo hold a great price; but old oxen are not ſo much in demand. The great ſtore of hay and ſtraw in hand, gives us an unuſual quantity of Winter food, eſpecially as few people are provided with their wonted extent of ſtock.

'Labourers wages continue to riſe. During the war, men were begging for employment; but now, when peace is returned, which of courſe might be expected to have increaſed their number, hands cannot be got. Cardiff Heath is now improving with great ſpirit under the patronage of the Marquis of Bute, by whoſe exertions an act of Parliament was obtained for dividing and encloſing the ſame. It was ſurveyed and divided by a countryman of yours, who ſeems to have given great ſatisfaction to all parties. It was about this time twelvemonth, that they began to encloſe; and, from preſent appearances, the one half of the heath will be in corn next year. Many different means of improvement have been tried; but paring and burning ſeems to be moſt effectual; and the wheats, where that was done, look very well.'

## *Eſſex Quarterly Report.*

A moſt remarkable dry Autumn prevented the wheats from being depoſited in the ground till a very late period; ſo that they have but juſt made their appearance, which at the preſent is rather unpromiſing, as they look but thin and weakly. Turnips turn out to be rather a better crop than was expected, and the young graſſes look not altogether unpromiſing. The produce of laſt crop turns out abundant, except beans and *peas*, which yield little more than the ſeed. Barley, and oats eſpecially, are very difficult to thraſh; being harveſted in ſo dry a ſtate, makes them adhere very cloſely to the ſtraw. The weather has been open, mild, and generally dry, till within this laſt week, ſince which time a ſevere froſt has ſet in, without any ſnow, which appears likely to continue, the thermometer varying from 20 to 24 degrees. Every one is embracing the opportunity of carting the manure and compoſt on the lands; ſo that every horſe and man is employed. We are now looking forward to the time of beans ſowing, which will commence immediately upon the departure of the froſt. The method here uſed in planting them, is by ſowing broadcaſt, and ploughing in the ſeed, or by dibbling; a practice perhaps unknown in the North. A man has an iron in each hand about three feet long, with which he makes the holes, to admit of two or three beans each, which are dropped in by children, after which it is harrowed over. They are dibbled about nine

nine inches, and at about 4s. 6d. or 5s. an acre of expence. In the Winter ſeaſon, many farmers who have wet land employ ſome of their men in land-ditching or ſurface-draining. A new invention, or plan of performing this operation, has lately ſtarted up, by means of what is called a mole-plough, which makes an aperture in the earth about twenty inches below the ſurface, ſufficient to take the water off. Stock of all kinds is dear. Hogs are this ſeaſon chiefly fatted upon barley meal, it being the cheapeſt food, and are ſold at about 12s. 6d. a ſcore.——*January 15th.*

*Lincolnſhire Quarterly Report.*

The drainage of our fens and low lands does not go forward with ſo much expedition as could be wiſhed, though every perſon is thoroughly convinced, that the plan and report thereof given in by John Rennie Eſq. is admirably calculated to anſwer the intended purpoſe in the moſt complete and effectual manner. A ſcarcity of hands, and a want of exertion in ſome individuals concerned, have retarded a work longer than expected, which eventually muſt prove vaſtly beneficial to the intereſt of this county, and the numerous individuals who have a right to the lands now under this mode of improvement.

The grain markets are dull; but thoſe for ſheep and cattle preſent every proſpect of maintaining high prices. Land rents continue upon the riſe, though ſuſpicions may be entertained that the new ſets will not ſtand the teſt of time. Some of the ground ſold by the fen commiſſioners for defraying the charge of fences and buildings, has drawn forty pounds per acre in its natural ſtate; but this perhaps is an inſtance of the whimſical diſpoſition of mankind. A great many encloſure bills are going forward here; and attendance upon meetings about ſuch buſineſs occupies a conſiderable ſhare of the time of our chief men of buſineſs——*17th January.*

*Norfolk Quarterly Report.*

Notwithstanding the heavy crop of corn to be carried laſt harveſt, the whole was ſecured expeditiouſly, and a reaſonable hope was afforded, that we would enjoy an early and favourable ſeaſon for wheat ſowing. On lands which had been Summer-fallowed this was the caſe; but the ſyſtem of fallowing, or, in the dialect of the country, 'giving a thorough Summer tilth for wheat,' being now univerſally exploded, (though I am firmly perſuaded it will frequently be found neceſſary to recur to the practice of the old ſchool in this particular), and ſowing upon the flag being very generally adopted, the long drought during harveſt, and for ſome weeks afterwards, precluded the poſſibility of breaking up for a conſiderable time the two years leas for wheat; and conſequently, this operation was obliged to be deferred, in many caſes, till the ſeaſon for ſowing was far advanced, and fears, not very unreaſonable, were entertained, that, ſhould the Winter ſet in early and ſevere, the plants might be materially injured, before they had obtained ſufficient ſtrength of root to reſiſt the attacks of hard froſt. Providence,

however, has conſiderably leſſened theſe apprehenſions, by ſending an autumnal quarter remarkably mild and open. In conſequence of which the wheats have planted full and regular, and, till the commencement of the preſent ſevere froſt, appeared vigorous and healthy: even now I ſhould hope they will not ſuſtain any very ſerious injury, except in caſes where the ſeed was ſown, ſo late, that the plant is now only juſt beginning to make an appearance.

A heavy crop of corn on the ground is almoſt conſtantly prejudicial to the young clovers; but this year furniſhes an exception to a general rule, probably becauſe no very violent rains fell to beat the corn to the ground, after it had got into the ear. The clovers have planted thick and well, and, before the froſt ſet in, appeared unuſually freſh and luxuriant. The ſame remark applies to the Winter tares: unprotected, however, by a friendly covering of ſnow, it is not improbable but in ſome (perhaps in many inſtances), and particularly where the land is not in very high condition, they may ſuffer material injury. The turnip crop, after the firſt and ſecond hoeing, was extremely promiſing; but the long drought before, during and after harveſt, greatly injured the young plants, and it was apprehended they could not produce more than one third of an average crop: they are, however, greatly improved in the courſe of the laſt quarter, and, though the froſt has now entirely deprived them of their tops, may, I think, ſtill be deemed full half a crop. The quality is univerſally allowed to be very moderate, not ſufficiently good to fatten ſtock for market, without the aid of ſome more nutritious food; though a remark, which I have heard very generally made, and which my own obſervation confirms, 'that they are peculiarly mild and pleaſant for the table,' ſeems, in ſome degree at leaſt, to militate againſt this opinion.

Irrigation, which has lately been introduced into this county, and purſued with great ſpirit and judgement, will, in ſome caſes this year, fail to produce one of its moſt valuable advantages, early ſpring feed, owing to what, at this ſeaſon of the year is a very unuſual complaint, a ſcanty ſupply of water. The ſprings are ſo low, that a ſufficient quantity cannot be obtained for flooding; of courſe, the operation can, at the beſt, be but imperfectly executed. The average price of grain has been low; and I am perſuaded the farmer cannot afford to ſell it at the preſent rates. In the early part of the Report I have obſerved, that the bulk of the crop collected during the harveſt was very conſiderable. I doubt, however, whether the produce of corn, per acre, will exceed an average crop. Should I ſay wheat is three, and barley four quarters per acre, I am perſuaded, if I am erroneous in my calculation, it is in its exceſs; and as it is well known, that no conſiderable ſtock remained in hand at the commencement of harveſt, the preſent low price can only be accounted for, on the ſuppoſition that the crop in other quarters of the kingdom has greatly exceeded its uſual average, or that very extenſive importations have been made.——*Jan.* 17.

*Yorkſhire*

### *Yorkſhire Quarterly Report.*

THERE is ſomething peculiarly pleaſant, in the view of the preſent ſituation of the markets, in regard to the prices and ſupply of the varied products of rural economy—articles of univerſal conſumption. Every neighbouring market is conſtantly and abundantly ſupplied; yet the prices of the moſt neceſſary articles, ſuch as the various kinds of grain, cannot be deemed ſo low, as to form any abſolute diſcouragement to the grower, eſpecially as the produce of the preceding year was alſo good; while thoſe of leſs immediate neceſſity, ſuch as grazing products, &c. are ſelling at prices at leaſt as encouraging as at any former period whatever, all circumſtances conſidered. The liberal and intelligent farmer will ever conſider it as an axiom, '*That good crops, with moderate prices, conſtitute his real proſperity.*'

The crops of wheat, barley, and oats, are rather ſuperior to the average produce, and turn out ſubſtantially on the floor. Grain is generally of excellent quality. Beans and peas were bulky on the ground, but are not expected to yield adequately in grain. The beans were late in ripening, nipt by the autumnal froſts, and ill-harveſted.

Till the preſent ſevere froſt, and extremely cold eaſt winds, the growing wheats had a moſt luxuriant appearance, which, though flattering at the time, is by no means a ſure omen of a favourable reſult: as the ground here is bare of ſnow, the cold may give them a ſeaſonable check. A very conſiderable proportion of the arable land has been ſown with that grain, in the beſt poſſible order and time.

The turnips, though by no means a deficient crop, are far ſeen into, (the early period of the Winter conſidered) from the unuſual ſhortneſs of the hay and after-graſs. They have accordingly been ſold at high prices, which is very different from the caſe of laſt Winter, when many of them were abſolutely waſted for want of cuſtomers. The preſent price of hay is about five guineas per ton.

The potatoes have very much diſappointed the expectations of the growers in general, who had flattered themſelves with the idea of a crop proportionate to the promiſe of top: they conſequently began ſelling at very low prices, but are now about 2s. 6d. per buſhel. Apples are extremely ſcarce and dear (16s. per buſhel), in conſequence of the deſtructive froſts of the Spring and Summer.

Fat cattle are at high prices; and, by all accounts, lean ſtock are at a ratio comparatively higher ſtill. Good horſes are extravagantly dear. Beef, Mutton, Veal and Pork, are about 8d. per lib.; and the demand for theſe articles appears to be increaſing.——*Jan.* 17.

### *Letter from Stafford, 18th January.*

'Beaſts and ſheep ſtill keep up in price, and cheeſe ſells at 3l. *per* hundred of ſix ſcore. Owing to a great demand from the clothiers in Yorkſhire, wool has lately advanced much, and land rent is daily getting higher; though, if the grain markets continue at the preſent rate,

I cannot ſee how farmers are to pay their way, the expence of labour and public burdens being now ſo enormouſly increaſed.

'My Dorſet ewes are beginning to drop their lambs, which are doing well, notwithſtanding the weather has, for ſome time paſt, been very ſevere. The act of Parliament for encloſing Needwood foreſt, paſſed, notwithſtanding the violent oppoſition given to it by ſome intereſted men, as hinted in one of my former letters.'

*Northumberland Quarterly Report.*

From the date of laſt Report to the beginning of November, the weather continued very favourable for harveſting the moor crops of corn, and the beans in the lower diſtricts. On the 20th October, we had a ſufficient quantity of rain, that left the Summer-fallows and bean lands, which were before too dry, in a fine mellow ſtate, peculiarly proper for ſowing wheat; and this favourable opportunity was not let ſlip by good farmers: probably the wheat ſeed was never put in under more favourable circumſtances with reſpect to weather, to which cauſe the ſubſequent healthy appearance of the crop may, in a great meaſure, be attributed.

Through the greateſt part of November, and beginning of December, the general ſtate of the weather was wet; but not to ſuch a height as to prevent the uſual operations of huſbandry from going forward, particularly the ploughing for the next year's fallow and Spring crops, which is everywhere in a great ſtate of forwardneſs. The preſent froſt commenced on the 10th inſtant, at a very convenient period for getting out manure, and forming dunghills in the fields intended for turnips next ſeaſon.

It is much to be feared, that the continued rains in the month of July, and the great flush of graſs immediately ſucceeding, has been productive of the rot in ſheep, as, on that account, many farmers have (within the laſt two months) been under the neceſſity of ſelling conſiderable numbers of their flocks at a very reduced price; and it ſeems there are yet many more in a doubtful ſtate upon moſt of the lands that are liable to that deſtructive, and hitherto unaccounted for, malady.

In laſt Report, it was hinted, that the turnip crop was not good, except upon dry loams; but theſe, ſince that time, have been conſiderably deteriorated, by their ſhooting out ſeed ſtems in the latter end of October and beginning of November; ſo that, in many fields, there is ſcarcely a turnip to be found without a long neck, or a ſtem from two to three feet high: and, probably, ſuch a general inſtance of turnips ſhooting before Winter, is not recollected by the oldeſt cultivator of that valuable root.

The proſpect of the prices of ſtock lowering in the latter end of September and beginning of October, was of ſhort duration. At Newcaſtle fair, on the 29th October, lean cattle for ſtraw were never known to be ſold at ſuch prices, nor ſo few brought to market. Fat ſtock has

alſo

alſo lately made a conſiderable advance, the preſent prices being 8s. 6d. *per* ſtone, ſink, for good beef, and 8d. to 9d. *per* lib. for ſheep.

Our corn markets have been, and are yet very ſlow:—the principa demand is for oats to the London market, particularly the potato oat, for which 6d. *per* buſhel more is given than for any other kind. The quality of wheat is ſo various in this diſtrict, and ſome of it ſo very bad, that, on the ſame market day, the prices have been from 3s. 6d. to 7s. a buſhel. In this county, it turns out a more deficient crop than was expected.

## Postscript to Scotish Intelligence.

*Letter from Glaſgow, 22d January.*

'The crop in general, in this quarter, is turning out very poorly, particularly that of wheat and barley: the former was never known to be ſo bad in quality: in many inſtances, our farmers have been without getting a price offered for it. The latter is alſo very poor; and, on account of the new duty on malt, our brewers will not look on it at any price. They are, however, well ſupplied with that grain, from England, of the beſt quality we have heretofore ſeen.

'Our potato crop has turned out but poorly, both as to quantity and quality. Oats is the only grain that is good; although they are falling much ſhort, both as to ſtraw and meal, from what was once expected; but theſe wants are, in a great meaſure, made up by the late extenſive importation. Since the 20th October laſt, we have had about 19,000 *quarters wheat*, and 3500 *barrels flour*, from America; 12,000 *bolls oats*, and 18,000 *bolls oat meal*, from Ireland. The greateſt part of the flour, however, with about 7000 quarters of the wheat, has been again exported to the Mediterranean. The meal is chiefly intended for the Highlands and Weſtern diſtricts, as Iriſh meal ſeldom takes in this market. We are ſtill in the expectation of a few cargoes more wheat from Virginia, through the Winter, with a pretty large ſupply of oats and oat meal from Ireland, little or no new grain having as yet arrived from that country.

'Our market at preſent is well ſupplied with all kinds of grain; and from the ſtock on hand, and the proſpect of a further ſupply from Ireland in particular, prices will, we think, keep moderate for ſome time to come.

'State of Glaſgow Markets, January 22. 1803.

| | | | | |
|---|---|---|---|---|
| American wheat, - | 31s.—33s. | per boll of 240 lib. | Engliſh. | |
| Dantzic ditto, - - | 32s.—34s. | ditto | Linlithgow meaſure. | |
| Engliſh ditto, - - | 32s.—35s. | ditto | ditto | ditto |
| Eaſt-Lothian ditto, - | 30s.—32s. | ditto | ditto | ditto |
| Scotch North-country ditto, | 28s.—30s. | ditto | ditto | ditto |
| This Neighbourhood ditto, | 16s.—25s. | ditto | ditto | ditto |
| Norfolk barley - | 25s. 6d.—26s. 6d. | ditto | Stirling | ditto |
| | | | | Berwick |

| | | | | |
|---|---|---|---|---|
| Berwick Barley - | 21s.—22s. | per boll | Stirling meaſure. | |
| North of Scotland ditto, | 17s. 6d.—20s. | ditto | ditto | ditto |
| This Neighbourhood ditto, | 12s.—16s. | ditto | ditto | ditto |
| Iriſh oats, - - | 16s.—19s. | ditto | Renfrew | ditto |
| Engliſh ditto (very fine), | 20s.—21s. | ditto | Stirling | ditto |
| Scotch ditto - - | 12s.—16s. | ditto | Lanark | ditto |
| Beſt oat meal - - | 19s.—20s. | do. 15d.—16d. | p. peck, retail | |
| Iriſh ditto - - | 15s.—16s. | ditto 1s.—1s. 1d. | ditto, ditto | |
| Britiſh fine flour - | 33s.—35s. | ſack of 2½ cwt. | | |
| American ſuperfine ditto | 40s. | barrel; Fine 36s.—38s. | | |
| Engliſh beans - - | 22s.—23s. | boll | Stirling meaſure. | |
| Scotch ditto - - | 16s.—22s. | ditto | ditto | ditto |
| Ditto peas - - | 18s.—21s. | ditto | ditto | ditto |
| Engliſh and Foreign white ditto | 23s.—25s. | ditto | ditto | ditto.' |

## *Morayſhire Quarterly Report.*

The quantities of wheat, barley, and oats, in this county, are now found to be fully equal to the average of ordinary ſeaſons; the quality not ſo good. Wheat weighs only 60 lib. Engliſh the firlot of 22 Scots pints. Barley 68 lib. Dutch per firlot of 32 Scots pints; and Oats 54 lib. Dutch, ſame meaſure.

Sales are dull in the extreme, and no ſort of demand from our uſual markets in the South and Weſt of Scotland. In the hope that wheat may yet come into requeſt, merchants are buying parcels at 25s. per boll; and a few oats at 12s. to 13s. 6d. as in quality.

Our barley no perſon will touch; and, to many, the cauſe is obvious. The late act of Parliament, laying a ſimilar duty on Scotch as on Engliſh barley, has induced our brewers and diſtillers to order north ſeveral cargoes of the latter; and as the produce ſo far exceeds our own, it is highly probable they will continue to do ſo, until Scotch beer is reduced to, at leaſt, two thirds the price of Engliſh barley. It ſeems evident, that had Government intended the ruin of this branch of Scotiſh agriculture, no meaſure ſo effectual could have been adopted; but the anxious ſolicitude of the preſent Miniſter for the proſperity of the country, and his experienced candour, leave no room to doubt that the repreſentations on this important ſubject, preſenting from all quarters, will receive that attention which they deſerve, and that redreſs which they require.

The ſale of cattle terminated, in Autumn, at prices unuſually high. Juſt now, there is little doing; for, as the price of beef riſes in our weekly market, the diſpoſable quantity diminiſhes; the preſent retail price is 7d. per Dutch lib. Few farmers now feed for the butcher, finding it more beneficial to beſtow their turnips on young well-choſen cattle, which are uniformly purchaſed by dealers, in March and April, for the South-country markets. Two ways of feeding thoſe cattle are adopted; both have their advocates. The one way is, keeping them looſe in a ſhade, with open ſtraw-yard in front, and giving the turnips on a graſs field: The other is, to have them bound up in byres, and there fed

fed with turnips and ſtraw; occaſionally letting them out to a court yard for air and exercife. While the latter mode evidently puts on moſt fat, the other is ſuppoſed to keep the cattle more hardy, conſequently, better able to ſtand the fatigue of journey and cold, when turned out to graſs.

Land rents here, as in every other part of the iſland, are much on the riſe; and no farm is ſooner known to be in the market, than ſeveral candidates appear for it. In many inſtances, rents are doubled, nay tripled, within the laſt nineteen years; but a very uncommon advance has taken place within theſe four or five years paſt. In ſituations where no foreign manure can be had, beſt open field lands are letting at 50s. per acre; middling lands 25s. to 35s.; and the very pooreſt ſandy ſoils at 15s. on leaſes of nineteen years. Were thoſe lands encloſed, and ſubdivided with ſufficient ſtone dikes, (at leaſt, ſuch as are calculate for grazing, and where materials can be had), there is little doubt but the preſent rents may ſtill be ſupported, admitting the tenant was to pay 6 per cent. intereſt for the caſh ſo laid out by the proprietor; and it is not eaſy to conceive how *he* could derive a more immediate and certain return for his money. But it is, however, a fact, that, to this day, there is ſcarcely a ſingle enclofure, in this county, on any farm occupied by a tenant!——*Jan.* 21.

## *Fife Quarterly Report.*

Although the harveſt of this county was in general well finiſhed, yet, on many farms, the peas crop received great damage from the wet weather which ſet in at the concluſion of the ſeaſon. Both peas and beans are remarkably unproductive; the grain bad in quality; and the ſtraw almoſt rotten. Wheat is vaſtly inferior, both as to quantity and quality, when compared with crop 1801, much of it being ſmutted and mildewed. Barley yields not amiſs upon the floor; but the quality thereof is ſo inferior, that few purchaſers have offered. Oats are our beſt crop; though, on high farms, or on moſſy and marſhy ſoils, they yield very poorly. Potatoes are below a medium; and Flax is worſe than ever ſeen in this county. The price of it, when dreſſed, is 16s. and 17s. *per* ſtone; and as for Seed, a fourth of the uſual quantity will not be gained.

Under theſe circumſtances it might have been expected that the general ſcale of prices would have been in uniſon with the imperfectneſs of the crop; but this is ſo far from being the caſe, that a want of purchaſers is evident to the dulleſt perſon. This proceeds from the exceſs of foreign importations, and the quantity of grain poured into this country from England, which this year is ſo ſuperior to our own, that none of our home produce, unleſs ſuch as is of the firſt quality, can be ſold. The increaſed rate of the malt tax contributes to the depreſſion of Barley; for ſo long as the ſame duty is exacted upon the worſt as upon the beſt grain, the latter muſt inevitably find a preference.

Trade and manufactures continue to proſper, and may they continue to do ſo! but when labourers and artiſans can earn ſix days proviſion by three days labour, it is clear, to demonſtration, that the price of victual

is approaching to an extreme that muſt prove dangerous to the proſperity of the country. The farmer becomes diſcouraged, improvement ceaſes, and with it the land becomes leſs productive. Rents cannot be paid; the proprietors in conſequence become poor themſelves; and, from a want of energy in a country ſo diſtreſſed, the greateſt evils may be dreaded. A ſcarcity may again raiſe prices immoderately high, and that at a time when manufacturers, from a habit of idleneſs acquired in theſe plentiful times, are unfitted for meeting diſtreſs when the hour of calamity comes round. It would be a wiſe meaſure therefore to bring the rate of wages and the price of proviſions nearly upon an equal ſcale, as this would tend to the real intereſt of the manufacturer, as well as that of the farmer and proprietor.——*Jan.* 20.

*Argyllſhire Quarterly Report.*

In a county which is chiefly devoted to paſturage, the agricultural Report at this ſeaſon of the year muſt be very circumſcribed. After a rainy Harveſt, the Winter ſet in mild and dry; ſo that the provender was long ſaved, therefore likely to prove abundant. The cattle are alſo in good order, and the prices and demand for them expected to be as great as ever. For the two-year-olds of next May, ſome have already refuſed 10l.—A great part of the Bear crop is, and will continue to be converted into whiſky, and ſmuggled into the Low country, till the men in power ſhall think proper to licenſe ſmall ſtills as formerly; a meaſure that would conduce not a little to the improvement of the health and morals of the people, and to the increaſe of the revenue. In the more arable diſtricts of the county, not a great deal has yet been ploughed. Our farmers are not ſufficiently ſenſible of the benefit of froſt, to moſſy, ſtiff, and lea grounds, which ought to be turned up before it ſets in; which it ſeldom does in the lower parts of this county till about the middle of January. For ſome time the weather with us, as in other parts, has been remarkably ſtormy; and for eight days paſt, the froſt has been very keen, and the cold very ſevere. This day a gentle thaw begins to unlock the earth, and to invite the plough.——*Jan.* 18.

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*** *For Notices to Correſpondents, ſee page* 3. *of the Cover.*

No. XIV. will be publiſhed on Monday the 2d of May.

THE

# FARMER'S MAGAZINE:

MONDAY, 2. MAY 1803.

(N°. XIV.)

## BRANCH I.

### ORIGINAL COMMUNICATIONS.

LETTER *from* GEORGE DEMPSTER *Esq. of Dunnichen, to the* CONDUCTOR, *February 19th.*

SIR,

THOUGH extremely gratified by your obliging favour of the 27th ult., I delayed acknowledging its receipt until I ſhould alſo have received No. XIII. which reached me only yeſterday, and was worried on the ſpot, ſtump and rump, and proved a very agreeable morſel. I promiſe myſelf and my neighbours many a ſavoury bit from your kitchen; and ſincerely hope that a ſound way of thinking upon ſome of the moſt important topics may be introduced, for the benefit of our empire, and the happineſs of its inhabitants. How much depends upon mankind thinking ſoundly and wiſely on agricultural topics, which, in point of extent, ſurpaſs all others, and which may be ſaid to embrace the whole ſurface of the globe we inhabit! I would ſtill be more laviſh in my commendation of your deſign, were it not that I ſhould thereby indirectly make a panegyric on myſelf. For theſe laſt forty years of my life, I have acted in the management of my little rural concerns on the principles you ſo ſtrenuouſly inculcate. I found my few tenants, without leaſes, ſubject to the blackſmith of the barony; thirled to its mills; wedded to the

wretched ſyſtem of outfield and in; bound to pay kain, and perform perſonal ſervices; clothed in hodden, and lodged in hovels. You have enriched the Magazine with refults of your farming excurſions. Pray direct one of them to the county I write from; peep in upon Dunnichen: and if you find one of the evils I have enumerated exiſting; if you can trace a queſtion, at my inſtance, in a court of law, with any tenant as to how he labours his farm; or find one of them not ſecured by a leaſe of nineteen years at leaſt and his life, the barony ſhall be yours. You will find me engaged in a controverſy of the moſt amicable kind with Lord Carrington, defending the freedom of Engliſh tenants from the fooliſh reſtrictions with which their induſtry is ſhackled, prohibitions to break up meadow land, to ſow flax, to plant tobacco, &c. &c. &c., all impoſed by fooliſh fears, or by ignorance, and confirmed by the ſelfiſh views of land ſtewards who naturally with the dependence of farmers on their will and pleaſure. God knows, Scotland is phyſically barren enough, ſituated in a high latitude, compoſed of ridges of high mountains; yet, in my opinion, moral cauſes contribute ſtill more to its ſterility. I urge the zealous proſecution of your labours, as a general change of ſyſtem and ſentiment is only to be effected ſlowly: your maxims are deſtined firſt to revolt mankind, and, long after, to reform them. There never was a leſs ſucceſsful apoſtle than I have been. In a miſſion of forty years, I cannot boaſt of one convert. I ſtill find the tenants of my neareſt neighbours and my beſt friends, cutting down the laird's corn, while their own crops are imperiouſly calling for their ſickles. I am much pleaſed with the rotations you ſuggeſt; and as thoſe topics are very favourite ones with me, they occupy no ſmall portion of my leiſure moments.

The Highland Society being ſilent on the ſubject of the emigration of the Highlanders who are gone, going, and preparing to go in whole clans, can only be accounted for by thoſe who are more intimately acquainted with the ſtate of the Highlands than I pretend to be. One would think the ſociety were diſciples of Pinkerton, who ſays, the beſt thing we could do would be to get rid entirely of the whole Celtic tribe, and people their country with inhabitants from the low country. How little does he know the valour, the frugality, the induſtry of thoſe ineſtimable people! or of their attachment to their friends and country! I would not give a little Highland child for ten of the higheſt Highland mountains in all Lochaber. With proper encouragement to its preſent inhabitants, the next century might ſee the Highlands of Scotland cultivated to its ſummits, like Wales or Switzerland, its vallies teeming with ſoldiers for our land army, its bays, lakes and friths with ſeamen for our navy.

But

But this is a long chapter. A Roman orator ſays, Arms muſt give way to the gown—A modern orator might ſay, with more truth, Arms muſt give way to the wool the gown is made of.

At the height of four hundred feet above the level of the ſea, and ten miles removed from it, I dare not venture on ſpring wheat, but I have had one advantage from my elevation, my autumn wheat has been covered with ſnow moſt of the winter, through which its green ſhoots peep very prettily. I have ſometimes believed that this hardy grain is better calculated for our cold climate than is generally thought, if ſown on well cleaned and dunged land, very early, perhaps by the end of September, ſo as to be in ear when we get our ſhort ſcorch of heat from 15. July to 15. Auguſt, and to profit by it. I was pleaſed with your recommending married farm-ſervants. I don't value mine a ruſh till they marry the laſs they like. On my farm of 120 acres, I can ſhew ſuch a crop of thriving human ſtock as delights me. From five to ſeven years of age, they gather my potatoes at 1d. 2d. and 3d. per day, and the ſight of ſuch a joyous buſy field of induſtrious happy creatures revives my old age. Our dairy fattens them like pigs; our cupboard is their apothecary's ſhop; and the old caſten clothes of the family, by the induſtry of their mothers, look like birthday ſuits on them. Some of them attend the groom to water his horſes; ſome the carpenter's ſhop, and all go to the pariſh ſchool in the winter time whenever they can crawl the length.

Could your Magazine ſuggeſt a better uſe to make of our Highlanders than ſhipping them off for America; it would be a public ſervice, and not foreign to the deſign of it.

I am your, &c.

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## NOTE.

The Conductor feels himſelf highly honoured by the above enlightened and liberal communication, and returns his moſt ſincere and ardent thanks to the worthy and benevolent author. In a long courſe of public ſervice Mr Dempſter diſtinguiſhed himſelf in an eminent manner, by arduouſly ſupporting every meaſure which had the improvement of the country or the welfare of mankind for its object, and in repeated inſtances contributed to the benefit of trade, manufactures and agriculture. Thoſe, who are in the leaſt acquainted with the hiſtory of the laſt forty years, need hardly be reminded of his philanthropical and unwearied exertions. In fact, his name is to be found in almoſt every Parliamentary report of any conſequence; and though connected by principle with the Rockingham or old Whig party, he never for a moment allowed political principles

to influence his judgement, when ſubjects connected with the improvement of the country were under diſcuſſion, but ſupported them according to their utility, no matter by whom they were brought forward.

Now, when he has retired to private life, he continues to poſſeſs the ſame animated deſire of doing good to the community, as when he filled a public ſtation. Long may the country have cauſe to boaſt that it poſſeſſes ſuch a citizen; and may he, in his advanced years, enjoy every comfort which makes life pleaſant and agreeable. Senſible that the countenance and approbation of ſuch a man will prove of the utmoſt advantage to the cauſe in which we are engaged, it will be our ſtudy to retain his favour, and to profit by every hint coming from ſuch a reſpectable quarter. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Thraſhing Machines.*

SIR,

THE thraſhing machine is confeſſedly one of the greateſt improvements that have been introduced in our day. It not only leſſens human labour, and that of a kind which is intolerably ſevere, but gives a greater return to the farmer than was formerly gained by the operation of flails. On theſe accounts, I am glad to ſee the ſubject taken up in your Magazine, and truſt that a deſcription of its merits cannot fail to prove beneficial to the public in ſeveral reſpects.

Your correſpondent A. G. (Vol. 3. p. 428.), ſeems, however, rather imperfectly acquainted with the hiſtory of this uſeful implement; and, if I am not miſtaken, is alſo deficient in the knowledge of its powers, and the principles on which it is conſtructed. Give me leave, therefore, to make a few remarks on his letter, and to explain, in a brief way, the various attempts that have been made by different perſons, at different periods, to conſtruct thraſhing machines. My opportunities of acquiring information concerning theſe matters have been numerous; but whether I have improved them aright, will beſt appear from the ſequel. I ſhall, in the firſt place, elucidate the hiſtory of the machine; then inveſtigate what is ſaid by A. G. reſpecting his various attempts to improve it; laſtly, demonſtrate that thraſhing machines of a ſmall ſize are a real and poſitive loſs to every farmer who uſes them, and that the flail is preferable to theſe weak and comparatively powerleſs implements.

Before

Before entering upon the firſt branch of the propoſed plan, I muſt remark, that your correſpondent almoſt totally neglects to mention the only machine capable of performing the arduous talk of ſeparating corn from the ſtraw, while he dwells at great length upon the trifling and inſignificant attempts of thoſe, who, it would appear, had been trying to conſtruct implements for thraſhing at an earlier period. He even avoids noticing the endeavours of many people to conſtruct machines, which, though abortive, were in every point of view, more deſerving of attention than thoſe he has condeſcended upon. The inutility of ſuch as he has deſcribed, from the invention of Mr Evers to that of Mr Cotterel, being apparent to the moſt ſuperficial inquirer, I ſhall not offer to examine them, though a few words ſhall afterwards be uſed reſpecting the machine ſaid to be of Mr Cotterel's invention.

The earlieſt attempt in Britain to conſtruct a machine for thraſhing, was made by a Mr Menzies. The principle of it, as is well known, was to work a number of flails by a water-wheel; and this was afterwards imitated by Mr Meikle, as may be ſeen in a letter deſcribing the operations thereof, from ſix reſpectable farmers, ſubjoined to the ſecond volume of Wight's State of Scotiſh Huſbandry, publiſhed in 1778. A Mr Stirling of Perthſhire next deviſed a machine upon the principles of the flax mill, which was uſed by himſelf for ſeveral years, and even imitated by others. But thoſe which chiefly engaged the public notice, were two machines conſtructed in Northumberland, in 1772 and 1773; the firſt by a Mr Ilderton at Alnwick, and the other by a Mr Oxley at Flodden. Mr Ilderton's acted on the principle of preſſing or rubbing out the corn, which, it is ſaid, was in ſeveral inſtances imperfectly performed. Mr Oxley's attempt approached neareſt to ſucceſs; therefore, I ſhall be more particular in detailing the ſeveral parts thereof, eſpecially as it has been alleged by many people, that the machine now in general uſe was borrowed from it. This, however, is not true; for I am confident that Mr Meikle never ſaw nor heard any thing of it, till long after it was taken down. Indeed, a moment's conſideration will ſerve to convince any perſon acquainted with mechanics, that the two machines are altogether unconnected, both in principle and practice.

The machine erected by Mr Oxley for Sir John Delaval Bart. had two feeding rollers, and, inſtead of a drum, had a double ſet of arms connected at the ends by croſs bars. The ſkutchers were formed of pieces of wood about 3 inches broad, 1½ inch thick at one edge, by ¾ inch at the other, and were connected with the croſs bars by leather ſtraps. A circular breaſt was fixed beneath the centre, about 3 inches diſtant from the ſkutchers, ſo as to allow the corn to paſs betwixt them. The unthraſhed corn was laid on a

board at the level of the centre of the ſkutchers, and drawn in by two fluted rollers. The operations of the machine were very defective; and as little corn could be paſſed at a time, the expence of thraſhing was greater than if executed by the common flail.

The principles, upon which the machine was conſtructed, were evidently erroneous. The form of the ſkutchers uſed, and the way in which they were fixed, were ſuch, that their reverberations would neceſſarily weaken the force of the ſtroke ſo much, as to require an exertion of greater power. To give an extra power, however, was impracticable; for if one half of the velocity of the machines now uſed had been given, the ſkutchers would inſtantly have broke to pieces, and occaſioned the total deſtruction of the implement, beſides endangering the lives of thoſe employed in working it.

From theſe things it may be deduced, that velocity formed no part of the principles of this machine, and that it could not have been ſucceſsfully uſed without material alterations. But this is not all. The relative ſituation of the feeding rollers and ſkutchers was ſuch, that the utility of the former was in a great meaſure defeated. Their purpoſe is to draw the corn gradually forward, and to hold it firm when the ſtroke of the ſkutcher is given; but the diſtance betwixt them prevented the latter object from being accompliſhed. Another defect, and a material one, was the want of a drum, which is abſolutely neceſſary to prevent the corn from flying about the houſe, and the ſtraw and chaff from clogging the machinery to which the ſkutchers are ſuſpended. The abandonment and deſtruction of this machine, however, proves its inefficacy better than the ſtrongeſt arguments, and the moſt ſatisfactory human teſtimony.

This machine was never made public; and I believe that Mr Oxley was very ſhy in ſhowing it to ſtrangers. The particulars, which I now give, were communicated by a mill-wright at Newcaſtle, who aſſiſted in taking it down; and, being corroborated by information from others, may, I think, be fully depended upon.

Having detailed ſeveral of the unſucceſsful attempts to conſtruct a machine capable of thraſhing, I come with pleaſure to narrate the circumſtances which led to the conſtruction of the machine now in general uſe. Every former attempt having failed, (and this does not require any proof, ſeeing that all the old machines are laid aſide), unqueſtionably the merit of the invention appertains to the gentleman whom I am ſhortly to mention.

The late worthy Sir Francis Kinloch Bart. of Gilmerton, who, as it is well known, poſſeſſed a large ſtock of mechanical knowledge, in one of his tours through Northumberland, happened to ſee the machine erected by Mr Ilderton, at his farm near Alnwick,

wick, and ordered a model thereof to be made for his uſe, upon which he afterwards formed a number of improvements. Several of the models, executed under Sir Francis's inſpection, are ſtill preſerved; and one of them, tolerably perfect, I examined in the ware-room or depôt of the Board of Agriculture at London. As Sir Francis had no opportunity of trying a large model which he cauſed to be made, it was ſent by him to Mr Andrew Meikle, civil engineer at Houſton-mill near Haddington, in order that its effects might be aſcertained by the water-wheel of Mr Meikle's barley mill; but in making this trial, the model was torn to pieces; and the like fate befel a machine of full ſize, erected at the expence of Sir Francis, ſeveral years afterwards, upon the principles of the model ſent to Mr Meikle. Whether Mr Meikle had previouſly ſketched out a plan of a perfect machine, or whether the ſight of Sir Francis's model ſtimulated his inventive genius, are problematical circumſtances; indeed, they are immaterial to the main point; for if it can be ſhown, that no machine had been erected prior to that of Mr Meikle's, capable of executing the work intended, or undergoing the neceſſary velocity, then I preſume the merit of the invention muſt be given to him, even were I to allow, which after all is a diſputable point, that his attention was excited by the attempts of others, which, at all hands, are now acknowledged to have been imperfect and incomplete.

Mr Meikle, after trying Sir Francis Kinloch's model, as already ſaid, was induced to apply a principle entirely new, and which had not hitherto been uſed by any other. It is evident that the force required to thraſh perfectly, or even in any quantity, muſt be conſiderable; for no machine is capable of doing the work in a perfect manner, that does not move with a velocity exceeding two thouſand feet of the circumference of the drum in a minute. This occurred to Mr Meikle; and he could diſcover no ſurer method of executing the work, than to beat out the corn from the ear by means of a ſtrong drum or cylinder, upon which *fixed beaters* ſhould be placed. Experience ſanctions the juſtice of the principle adopted by him; for every machine now in uſe has been copied from thoſe he firſt erected, though, no doubt, many variations upon the ſize of the drum, and other matters totally diſtinct and unconnected with the original principle, have ſince been adopted, both by himſelf and others. The machine is ſo generally known, that it would be a work of ſupererogation, were I to take up your time in deſcribing it. I may only add, that one of the chief advantages of the machine is, that it is capable of being ſafely wrought with greater velocity than I have mentioned; and, without velocity, corn cannot be thraſhed in a perfect manner.

The firſt machine erected by Mr Meikle was on account of Mr Stein of Kilbeggie; and, as a proof that ſuch machines were then altogether unknown, it was ſtipulated in the agreement, that Mr Stein ſhould furniſh the wood, and that, if the machine did not anſwer the intended purpoſe, no payment ſhould be given to Mr Meikle for the work performed. Another was ſhortly thereafter erected for Mr Selby at Middleton, Northumberland, which was immediately copied and imitated by ſeveral mill-wrights of that county; one of whom afterwards had the ſingular modeſty to claim the invention, and, what was of more importance, at leaſt to him, had the good luck of getting many people to credit the aſſertions which he offered.

After the utility of the machine was completely aſcertained, a patent was applied for and obtained by Mr Meikle, ſecuring the benefits of the invention to him and his heirs for the period of fourteen years. It is a ſingular circumſtance, that, after obtaining this patent at a conſiderable expence, it ſhould not have been immediately acted upon, which would have been an eaſy buſineſs at the outſet; though afterwards, when attempts were made to carry the patent into execution, the immenſe number of interlopers to be combated rendered the taſk too Herculean to be accompliſhed. Mr Meikle's ſilence, in fact, enabled every man that imitated the machine to claim the invention as his own, and occaſioned the public at large to believe that the patent was obtained under falſe pretences. It is not my buſineſs to unriddle the cauſes of Mr Meikle's inaction, but I believe they are pretty generally known; and though they do not exalt his character as a man of buſineſs, yet they are not diſcreditable to him in any other reſpect. Indolence and inattention are defects which have clung to the greateſt geniuſes, and ſerve to ſhow us that the bounties of nature are more equally diſtributed than is generally imagined.

At a future period, viz. when ten years of the patent were expired, ſome of Mr Meikle's friends ſtood forward, and endeavoured to eſtabliſh its validity; but, after ſeveral ſteps were taken to procure redreſs, it was found that the buſineſs was ſo complicated and confuſed, and the body of interlopers ſo numerous, that the full period of the patent might have been waſted away before matters could have been finally adjuſted. Guided, therefore, by prudential motives, and laying the queſtion of right entirely aſide, it was judged expedient to withdraw the actions which had been entered, and relinquiſh the benefits which the patent conferred. Thus, the worthy inventor, partly owing to indolence at the outſet, has been deprived of the reward he juſtly merited, though his caſe well deſerves the application of national munificence.

Having

Having now ſtated that the invention belongs to Mr Meikle, permit me to examine what is ſaid by your correſpondent reſpecting Mr Cotterel's machine, and the erection of thraſhing machines in Sweden. Theſe are the only two paſſages of his hiſtorical ſtatement that require to be noticed, the remainder being inapplicable to the ſubject under conſideration.

Your correſpondent ſays, 'Mr George Cotterel, iron-founder, Leith Walk, invented one altogether of caſt-metal, except the frame. I am not certain (he adds), whether Mr Cotterel or Mr Meikle was the firſt inventor of the principles of this machine; but I underſtand that Mr Meikle claims the invention in this country.' This is the firſt time, I believe, that ever Mr Meikle and Mr Cotterel were linked together in one paragraph. Indeed, it is wonderful that any perſon, pretending to illuſtrate the queſtion, could make a compariſon; for, in fact, the two machines have little more affinity to one another, than a brewer's dray has to the King's ſtate-coach.

In the firſt place, Mr Cotterel's machine had no drum;—this, of itſelf, proves that it was radically different from Mr Meikle's. In the ſecond place, it could not bear velocity, as the ſkutchers were not fixed; which proves it was altogether uſeleſs. Mr Cotterel's machine was, in fact, a mere toy, fit only for children to play with; and though ſanctioned by the Board of Truſtees at Edinburgh, who moſt generouſly gave twenty pounds of the public money to the inventor, yet was reprobated from the firſt by every man in the leaſt acquainted with the ſubject. The erection of it brought diſcredit, for many years, upon thraſhing machines of all deſcriptions; for people, who were ignorant of mechanics, naturally enough concluded, when they ſaw the imperfectneſs of this implement, that machines of every kind were equally defective. I ſpeak with certainty, when I ſay that the importation of Mr Cotterel's machine into Norfolk, at an early period, prevented thraſhing machines from getting a footing in that opulent county, till one was erected, betwixt three and four years ago, in the neighbourhood of Lynn, upon the principles of Mr Meikle's invention, which has changed the public opinion entirely. It was at the launching of this very machine, that the Duke of Bedford and Mr Coke attended, as mentioned in the account of that reſpectable Nobleman, preſented in page 275. of laſt Volume. In a word, Mr Cotterel's machine is laid aſide, becauſe it did not anſwer the object intended; whereas, Mr Meikle's has ſpread far and wide over the whole iſland, becauſe experience has proved the wiſdom of the principle upon which it is conſtructed.

I never knew, before I read your correſpondent's letter, that any perſon, directly or indirectly, gave the merit of inventing the thraſhing machine now in uſe to Mr Cotterel. That Mr Cotterel

terel invented *a* machine, I do not dispute: But the question is, Whether the one he invented was comparable to the one constructed by Mr Meikle? To persons acquainted with the business, this is the only true view of the matter. Hundreds of people have attempted to construct machines; but these attempts do in no shape lessen the merit of the man who brought the invention to perfection.

I am convinced, however, that, with superficial inquirers, the attempts of others have contributed greatly to lessen the merit justly earned by Mr Meikle. I have often heard such people exclaim—'Mr Meikle the inventor of the thrashing machine! No such thing. Others made machines before they occupied his thoughts.' This I may safely concede, without lessening his merit; because the inutility of every prior invention is now satisfactorily ascertained.

With regard to the assertion, that thrashing machines, on nearly the same principles with those erected by Mr Meikle, have been long used in Sweden, I am sorry to declare that your correspondent has, in this respect, been grossly misinformed. I think it was in 1790 that a thrashing machine was erected in the neighbourhood of Gottenburgh, fully two years after one was put up for Mr Stein at Kilbeggie, as already mentioned. The circumstances which occasioned the erection at Gottenburgh were these. One Andrew Blackwood was taken from this country to lay water-pipes at that place; and he, observing the deficiency of Swedish mechanics, wrote to a brother tradesman, named John Girvan, who had assisted at Mr Stein's machine, that it would be an object worth his while to visit Sweden. This man accordingly went there, and actually erected, on Mr Meikle's principles, the first thrashing machine ever seen in that country.

Having now gone over what may be called the historical part of the subject, I shall proceed to make a few remarks on the attempts made by A. G. to improve thrashing machines.

Under this head of the subject, the communication of your correspondent appears to be of little consequence, and conveys no sort of instruction. His *data* are by no means sufficient to calculate the effect of any machine; as, for instance, he says, the first machine, which he attempted to improve, had a wheel of 40 teeth, driving a pinion of 7. On the same axis was another wheel of 40 teeth, driving a pinion of 7 on the axis of the skutch. The diameter of the drum 1 foot 4 inches, and, of course, the circumference 4.2 feet. Then, $\frac{40}{7} \times \frac{40}{7} = \frac{1600}{49} = 32.6$, the revolutions made by the drum for one of the wheel. Here is wanted the revolutions of the water wheel *p.* minute. Suppose them great, viz. 10 *p.* minute—

Then

| | | |
|---|---|---|
| Then the revolution of the drum | 32.6 | |
| Multiplied by — | 10 | |
| Gives the revolutions of the drum | 326.0 | *p.* minute |
| This multiplied by the circumference | 4.2 | feet |
| | 6520 | |
| | 13040 | |
| The velocity of the drum *p.* min. | 1369.20 | |

Again, with respect to the second machine which he erected—The dimensions of the water-wheel, with its revolutions *p.* minute, are given—

A wheel of 96 drives a pinion of 9, on the axle of a drum 3 feet diameter.

Here, $\frac{96}{9} = 10.6$ revolutions of drum for 1 of wheel. Suppose the water-wheel makes 10 revolutions *p.* minute, this gives 106.0 for the revolutions of drum *p.* minute, which, multiplied by the circumference of the drum 9.424, makes 998.9, the velocity of the drum *p.* minute. Hence it appears, that supposing the water-wheels made 10 revolutions *p.* minute, then the velocity of the drum in the first machine was 1369.2 *p.* minute, and its velocity in the second was 998.9.

From the above it does not excite surprise, that the drum of 3 feet diameter did not thrash so much as the one of 16 inches, seeing that the necessary velocity was altogether wanting.

I do not pretend to say, whether these machines thrashed clean or not. I suspect they would not; for I never saw one, the circumference of the drum of which did not move with a velocity exceeding 2000 feet *p.* minute, that did its work as it ought to be done. Those which I have found most complete, have the velocity of the drum from 2400 to 2700 feet *p.* minute.

I must delay the remainder of my remarks to an after occasion, as I do not wish to engross too much of your Magazine, or prevent you from giving the customary variety of fare to your numerous readers. Different people have different tastes; and it is certainly right to gratify them as far as circumstances will permit. I am yours, &c.

ARATOR.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Method of Tanning Leather in Lewis, and other Iſlands of the Hebrides.*

SIR,

ALTHOUGH the ſubject of the following communication be not immediately connected with agriculture, yet I flatter myſelf it has a remote connexion, and that its utility is ſuch as to deſerve being made generally known, through the medium of your extenſively circulated work.

I had no idea of troubling you, or your numerous readers, with the information I had collected on this point, becauſe I ſuppoſed it to be generally known; and preſumed that if the practice of the Hebridians were advantageous, it would have been, long ago, univerſally adopted. In their ſituation, I conſidered their mode of tanning leather, rather as the effect of neceſſity, which has no choice; than as reſulting from a deliberate preference to other modes, which they had equally in their power to adopt.

But having learned from the tranſactions of the Dublin Society, that Thomas Rankin of Ballaghey had ſucceeded in tanning leather by means of heath, I am induced to think, that the Hebridian practice is not ſo generally known as I at firſt ſuppoſed, and that it is of greater importance than I was aware. In fact the Hebridians have been in the habit of tanning leather with heath, and other plants, which they gather in moſſes, from time immemorial.

It may be neceſſary to explain to ſome of your readers, the cauſes which have led to the adoption of this and ſimilar practices.

In the remote Highlands and Iſlands of Scotland, you do not find ſociety ſubdivided into farmers, tradeſmen, and labourers, as in other places. Every man, and woman too, is accuſtomed to do every thing. The women ſpin and weave the cloth; dye, and wauk or thicken it with their feet upon an old door; and the men tan the leather, and make all the ſhoes that are uſed by the family. I have often been ſurpriſed at the addreſs they diſplay, in effecting their purpoſes with very imperfect inſtruments.

Among the remote mountains of the main land, the people uſe the bark of birch, of aller, of willow, or of oak, for tanning their leather; juſt as is practiſed in other places. But in the Iſlands, where there is very little wood, neceſſity has impelled the people to have recourſe to other means of effecting this object.

It was in the pariſh of Uig, in Lewis, Auguſt 1800, that I firſt learned they tanned leather in the way alluded to. This is, perhaps, the part leaſt frequented by ſtrangers, of any in the

Britiſh

Britiſh dominions; yet the people are generally more cleanly in their perſons, are taller, and more elegantly formed, than occurs in ſeveral other diſtricts more frequently reſorted to. They have alſo a natural politeneſs, and diſpoſition to oblige, in which there is no mixture of affectation.

I afterwards learned that this mode of tanning leather is generally practiſed, not only in Lewis, but in moſt of the Hebridian iſlands.

Their mode of proceeding, as far as I could collect it, is as follows:

They firſt apply to the ſkins a quantity of lime, diluted with water; the lime is commonly procured from burnt ſea-ſhells. I ſuppoſe the intention of this may be, to make the ſkins part with the hair, the epidermis, and fat they may contain.

After the lime has operated its intended effect, the ſkins are ſcraped as clean as poſſible, waſhed, and immerſed ſome time in a running ſtream. I ſuppoſe the effect of this may be, to extract the gluten, or ſoluble mucilage, from the ſkins.

Laſtly, the tan-juice is applied which is procured from the green tops of heath (heather) or from tormentil and other aſtringent plants which grow in moſſes.

Theſe plants they collect, and having chopped or bruiſed them, they boil them a long time in a pot, adding, when neceſſary, new materials until a ſufficiently concentrated juice be obtained. When one potful is prepared it is ſet aſide, and another filled as before, until the quantity neceſſary for the ſkins on hand be procured.

It may be proper to obſerve that they prefer tormentil, where a ſufficient quantity can be procured, to every other plant. When this is not the caſe, they mix the tormentil, or ſome other aſtringent moſs-plants, the names of which I could not learn, with the heath. In other ſituations, where ſuch moſs-plants are not to be found, or are not known, they extract the tan-juice from heath alone.

The tan-juice, thus obtained, is ſometimes applied by rubbing it upon the ſkin, previouſly ſtretched upon a door, or other board. But the moſt common practice is, to immerſe the ſkins in the juice in a veſſel of ſufficient capacity to allow them to lye looſe, and to be eaſily turned. Frequently a hole dug in a moſs is uſed as a tanpit; and they think that the water, which oozes from the moſs, contributes ſome aid to produce the effect. They generally prefer moſs-water for extracting their tanning lee; and in all caſes the lee is allowed to cool before it is applied to the ſkins.

I heard of others who were not at the pains to boil their plants; but, having collected a ſufficient quantity of heath, or other aſtringent vegetables into a moſs hole, or other convenient place,

place, they allowed the cold water to extract the tanning principle, and then immerfed the fkins.

I could not learn that it made any difference, whether the vegetables were ufed in a green ftate, or were dried previous to their being ufed. But I underftood it was neceffary to avoid foaking them in water after they were gathered, as this would carry off part of their tanning principle.

After the fkins have imbibed a fufficient portion of the tan, they are ftretched upon fticks, and expofed to the air. When dried, thofe intended for upper-leathers are rubbed upon a door, to increafe their flexibility.

Chemifts have afcertained, that the gallic acid, though naturally connected with tan, may be feparated from it, and is altogether a different fubftance; but they have not afcertained what tan is, nor the mode in which it operates. In all the cafes that fell under my notice, it appeared that the tan never produced its effect, in hardening or corrugating the leather, and rendering it impervious to water, until after the fkins were dried, and expofed fome time to the air, juft as the ink is never good until after it has been frequently fhaken and expofed to the air.

The tan leaves the fkins of a brown colour, and the black dye is never applied until after the leather is made into fhoes. The black dye is communicated by anointing the fhoes with a folution of fulphate of iron; and fometimes, where this cannot be got, they have recourfe to a ferruginous fpring. The iron ftrikes a black colour with the tan previoufly exifting in the leather, and, at the fame time, renders it more impervious to water.

The fkins of horfes and black cattle, who have either died, or fallen from rocks, together with thofe of a few beafts flaughtered for their own ufe, are chiefly prepared in this way, and are generally fufficient for the internal confumption of the people. The thicker fkins are ufed for foles, and the thinner, and more flexible, for upper leathers. In places reforted to by fhipping, they commonly ufe fpun hemp and rofin for ftitching their fhoes. In other places, they ufe a fine thong of tanned horfe leather for this purpofe; and it is furprifing how tight and neat fome can make fhoes by this laft mode of ftitching.

I have had fhoes (provincially called *broghar*, or *brogues*) tanned and made in the way here defcribed, which were much eafier for the feet, afforded a firmer ftep upon craggy mountains, and lafted longer, by double the time, in traverfing moors, and other rough ground, than I ever experienced in the beft London leather of equal thickneſs.

I fhould have obferved, that extracting the tan by boiling, is always reckoned the moft œconomical practice, as it extracts a much greater proportion of the ftuff from the fame materials, and enables them to make the liquor of a certain known ftrength.

ſtrength. Now, leſt any part of the effect may depend upon the material of which the boiler is compoſed, it may be proper to mention, that in Lewis, and, as I was told, in other iſlands where this mode of tanning is practiſed, the only boilers, and veſſels for holding liquids of every kind, in common uſe, are compoſed of wrought clay, firſt ſlowly dried, and afterwards baked. Theſe the people make for their own uſe, of ſurpriſing neatneſs and durability, conſidering that they have no other tools to work with but their hands.

From the great, and ſtill increaſing demand for tanned leather, a demand that ſeems now to exceed the quantity of bark that can be procured to do it in the ordinary way; and from the ſucceſs that ſeems to have attended the experiment in Ireland, I am induced to trouble you with this minute account of what I could learn reſpecting the mode of tanning in the Hebrides. My object will be accompliſhed, if any of your ingenious correſpondents who have leiſure, and command of the materials, can be induced to make the neceſſary experiments, with a view to aſcertain, 1*ſt*, Whether their practice may be advantageouſly adopted into common uſe; 2*d*, Whether it may not be improved upon.

From my ignorance of the art of tanning, and of the Gaelic language, I am conſcious that many ſteps, highly neceſſary to the ſucceſs of the operation, may have eſcaped my notice. Though I had frequent opportunities of ſeeing the ſkins in their ſeveral ſtages of preparation, yet theſe were only incidental objects of attention, and I found the people very ſhy in anſwering queſtions concerning them; becauſe ſuch queſtions excite a ſuſpicion that you are connected with the Exciſe, who are very ſharp in ſeizing all the ſkins they can find, that are tanning in a private way. My oral information was derived through the medium of interpreters, who generally ſpoke the Engliſh language imperfectly. But if this mode of tanning be capable of being rendered uſeful to the world at large, it is to be hoped that ſome inhabitant of theſe iſlands, into whoſe hands your work may come, will have the goodneſs to rectify my errors, and to furniſh you with a more correct detail of the proceſs.

J—— H——.

*Edinburgh, Jan.* 1. 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Raiſing of Flax.*

SIR,

IF you think the following hints to farmers on the raiſing of flax worth a place in your uſeful Magazine, you will oblige me by inſerting them.

The

The raiſing of flax in Scotland, has long been held out as an object of national importance; and premiums have been annually given by the Board of Truſtees, for many years paſt, to encourage the growth of it. Theſe premiums have certainly a tendency to produce the deſired effect; but they never can, and never ought to be ſuch, as to induce a farmer to raiſe an unprofitable crop. A much greater inducement, and which appears to me to deſerve the ſerious conſideration of every farmer who has it in his power to raiſe this article, has been held out for ſome years paſt, and has every appearance of continuing for ſome years to come, viz. the high price of flax in every part of the Continent.

The price of the foreign, regulates, in a great meaſure, the price of this country flax; and the following may be taken as nearly the average price of the beſt twelve-head Peterſburgh flax for the laſt nine years.

*Anno* 1794, at 35s. *p.* cwt. of 112 lib. Engliſh.
1795, at 53s. *p.* do.
1796, at 54s. *p.* do.
1797, at 52s. *p.* do.
1798, at 48s. *p.* do.
1799, at 59s. *p.* do.
1800, at 66s. *p.* do.
1801, at 72s. *p.* do.
1802, at 75s. *p.* do.
Preſent price, Jan. 1803, at 80s. *p.* do.

As the price in 1802, is more than double that of 1794, it is evident, that, if the price of flax raiſed here, bears any proportion to that raiſed in Ruſſia, (and it muſt be ſo), the farmer who could raiſe it in 1794 and 1795 without a loſs, muſt have had a great profit in 1801 and 1802, ſuppoſing the ſeaſons to have been equally favourable. If this circumſtance is not ſufficient to ſtimulate our farmers to cultivate the article, it would appear that there are ſome great objections which cannot be got over; and, in that caſe, that the premiums granted by the Board of Truſtees are loſt, and might perhaps be better applied in bounties upon the importation of flax from America or elſewhere, or the raiſing of it in ſome of the colonies.

Be that as it may, the high price of flax is certainly occaſioned principally by the monopoly enjoyed by the Ruſſians, Germans, and Dutch, as they find that we can neither raiſe a quantity equal to our conſumption at home, nor get it from other countries; and it will probably continue to be high, until our own farmers, the farmers of other countries, or the Ruſſians themſelves, are induced, from the high price, to raiſe and bring to market a quantity greater than the demand. A. P.

*8th January* 1803.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Tithes again conſidered.*

SIR,

THE ſilence of all parties for ſome time paſt, reſpecting the grand queſtion of Tithes, gave me reaſon to hope that the ſubject was at length fairly laid to reſt. But it would ſeem, that the reaſon why the aſhes of controverſy were not ſooner ſtirred up, was only that in the end they might be blown into a flame. Your correſpondent T. S. ſeems to have conſidered and reconſidered the ſubject; and, leſt his argument might appear to have a weak ſide, he reſts his defence on the ſtrong footing of *right and juſtice*. Thus, to be ſure, he tries to ſhut our mouths as completely as though he were to join iſſue with thoſe who heſitate not to trace them back to the remote period of the days of the Old Teſtament. If, indeed, 'juſtice is out of the queſtion,' while we force the holders of tithes to give up their *right*, then, certainly, the leſs that is ſaid about the buſineſs the better; for however much a ſet of farmers and others, who have an intereſt in the affair, may indulge their ſpleen in periodical publications, yet a wiſe Legiſlature will moſt unqueſtionably never be tempted to deviate from the path of rectitude and ſound policy.

Are we then to believe, that the land-owners, who hold ſeven eighths of the property of the kingdom, are the *monſtrum horrendum*, the Polyphemus, who is keen on ſwallowing up the weak innocent lambs, who have a right to the other eighth part? I fear that to tell this, would be but an indifferent way to get the landed intereſt to ſtand firm in defence of the preſent ſyſtem of tithes. But if this gentleman is inclined to diſpute the affair on the ground of *right*, even into that field we will follow him. The clergy are compoſed of a ſet of men whom I revere; men, without whoſe counſel and example we ſhould ſoon degenerate, however poliſhed might be our manners, or however far advanced we might be in ſcience, into mere worldlings, regardleſs of our immortal concerns. While, therefore, I argue the matter, I mean not to attack them, but to reprehend the plan by which they are maintained.

From what mother, then, ſprung this poor man's ewe lamb? (the expreſſion is your correſpondent's own).—What was the origin of tithes? If your correſpondent will lay open before me the word of inſpiration, he muſt be prepared to ſhow

that we are ſtill bound to adhere to the ceremonial diſpenſation; that our peace-offerings and our free gifts muſt yet be laid on the altar; that our political œconomy muſt ſtill be the ſame as it was in the days of Moſes; and that the ſons of Levi, as a reward for miniſtering in the holy place, ſhould 'every *third* year, 'which was the year of tithing, tithe all the tithe of the in-'creaſe of the land.' Or, if he will carry us back to the remoteſt antiquity, I will pledge myſelf to point out the time when tithes were not; and I will take it on me to ſhow, that, like the feudal ſyſtem, like thirlage to mills, and all the '*arrage and carrage*' * under which ſo many long groaned, they had their origin in the peculiar circumſtances of the times. The tie which bound the vaſſal to his baron, was perhaps indiſpenſable in the days of anarchy and confuſion; but when, at length, a free government dawned on our iſle, it was found neceſſary that this tie ſhould be forcibly cut aſunder. The intolerable labour of grinding a few handfuls of corn, by means of the quern, probably gave riſe to what is now reckoned a very ſimple machine, our meal mill; a machine which, were it the invention of even our own days, it might poſſibly be proper to reward with a patent: but the dues for grinding, which it was agreed ſhould be given to the proprietor of the mill as a compenſation for the expence he had incurred, (and it may be that they were thought at the time to be the only proper compenſation), were ſoon found to be a ſtrong bar to improvements in agriculture; and therefore the Highland Society, with that ſpirit which became them, procured it to be enacted, that in thoſe places where the bondage ſtill ſubſiſted, the proprietor ſhould *be forced*, on an equivalent, to give them up. But I will doubtleſs be told, that though tithes had their birth in the dark ages, when the Romiſh Church uſurped ſuch dominion over the conſciences and perſons of men, as ſtill to make the mind revolt with abhorrence, they have nevertheleſs long been recogniſed by the law of the land; that, therefore, they are now become as really and truly property, as the beſt titled eſtate in the kingdom; and that it would be perfectly unjuſt to force the holders of them, without their conſent, to give up this right. If we are to wait till we obtain the entire and complete conſent of the Body to this meaſure, we ſhall prove ourſelves as far advanced in idiotiſm, as was the man who patiently ſat down on the bank of the river, to wait till its waters ſhould run paſt. Strange! that you ſhould every day read advertiſements in the papers, giving notice that a bill is to be brought into Parliament (not certainly with

* An expreſſion inſerted in the old feu charters, denoting every kind of carriages which the baron might chooſe to exact of his vaſſal.

with the approbation of all parties) for making a turnpike road, and yet talk of force and injuſtice here. Why ſhould the kingdoms of Great Britain and Ireland have been united, while ſuch a large proportion of our friends on the other ſide of the water, were decidedly averſe to the meaſure, and when it was to do ſuch a material injury to the houſeholders, and the ale-ſellers of Dublin? Were it neceſſary to obtain the conſent of all parties to every meaſure which was to be brought about, none, even the moſt ſalutary, ſhould ever be carried into effect; for there are always ſome mules among us, who, ſince they chooſe not to be led, ought to be driven.

Why inſiſt ſo much on *right and juſtice?* Are not the clergy a ſet of men who are paid for doing a certain piece of work? Where then ſhould be the mighty injuſtice of altering the mode of payment? Your correſpondent will doubtleſs tell me, that we have long gone on in the ſame way; and that, on the faith that we are to continue, benefices are daily bought and ſold in England at a fair price, like ſwine in a market. So, I will tell him, are the Africans in Jamaica; and ſo does the ſmuggler ſell his geneva and his tea on the faith that he ſhall be paid Each takes his riſk, and each hopes that no meaſure will be brought about ſoon enough to affect him.

But if your correſpondent will inſiſt on *right;* what right, I will now roundly aſk, has the Church to be ſubſiſted by the landed intereſt of the nation alone? O! it is law, he ſtill anſwers. Are our laws, then, like thoſe of the Medes and Perſians? If it is confeſſed that we abide not by the Moſaic diſpenſation, I know not how the idea can be reconciled, of laying the whole burden of the Church on the ſhoulders of any one ſet of men in the ſtate. There is not a ſingle inſtance in which the landed intereſt does not bear its ſhare of taxes equally with the reſt of the community; and this, thanks to the law, they have into the bargain: while a gentleman who comes home with a fortune, or he who makes his money by commerce, if he chooſes to throw what he has laudably earned into the ſtocks, or otherwiſe lay it out to intereſt, can have an opportunity of hearing the oracles of God illuſtrated, without paying a ſingle ſixpence for the ſupport of the prieſthood. It is idle, nay, it is highly indecorous, to amuſe us, by talking of *perfect right and juſtice,* while ſuch things are. In vain need we be told that this has nothing to do with the right by which the clergy hold their tithes; in vain exclaim, that we lay hold of periodical publications to bring forward our popular arguments; for it is well known, that the diſapprobation of the people at large againſt them is become ſo ſtrong, that it muſt find utterance ſomewhere: and that the grievance is turning ſo ſerious, as calmly to call for

redreſs. I ſay, grievance: nor let it be ſuppoſed that I am now croaking over our pretended evils, like thoſe who, but a few years ago, were branded with the name of *reformers;* I ſpeak as a farmer, and of what belongs to farming.

To come to the point, then, which materially concerns agriculture—Whether we ſhould gain as much by the abolition or the commutation of tithes, take whichever name you will, as to juſtify the meaſure? This, ſays your correſpondent, is what has never yet been aſcertained, and what we would do well firſt to ſettle. And to the ſame effect, another of your correſpondents long ago aſked, whether thoſe lands which are free of tithe were, or were not, better cultivated than thoſe which are ſtill loaden with the burden? Now, none of thoſe gentlemen can expect a direct anſwer to their queſtion. It were quite unreaſonable to ſuppoſe, that freedom from any burden whatſoever ſhould immediately begin to be felt: For, where men have gone on for a length of time in a beaten track, habit lays ſuch faſt hold on them, that it is long, even after the burden is removed from their ſhoulders, before they can be rouſed up to vigorous exertions. Suppoſe that this moment tithes were aboliſhed, a proprietor may find himſelf ſo circumſtanced, that though he ſhould have all the inclination in the world, and ſhould hold out every encouragement, he may not find tenants poſſeſſed of ſpirit enough to follow up his enterpriſing ſchemes. Their activity may have been laid to reſt, by the oppreſſion under which they had been ſo long weighed down; he does not find it convenient to have all his land in his own poſſeſſion, and though he ſhould ſet a neighbourhood an example of good farming, they may not, from theſe reaſons, be inclined immediately to follow it. It is by ſlow degrees that improvements begin to be made, and a thouſand things may occur to retard them. But if theſe gentlemen ſhould urge me to give a direct anſwer, I will do it; and I will aver, that thoſe laudable and ſpirited improvements which have taken place throughout the greater part of Scotland, and are ſtill going on, could never have been carried into effect in the face of this grating ſyſtem of tithes. Will any man tell me, that a farmer could, during ſeveral of the firſt years of his tack, go on to lime at the rate of a thouſand bolls of lime, leſs or more, and dung many acres at the rate of 5l. *per* acre, (and both theſe are by no means unuſual on a very ordinary ſcale), and otherwiſe to improve, by draining, trenching, &c. while he had the view before him of his good friend the parſon coming every year to ſhare in his profit? I am ſure, that were he to act ſuch a ſtrange part, if he ſhould not be inſtantly ſent to bedlam, he would, at leaſt, be thought more worthy of a place there than many who are confined within its miſerable walls. No! the

the conduct of the Lothian farmers, of the Carse of Gowrie, the Angus, the Aberdeenshire, in short, all the spirited farmers of Scotland; the high state of improvement to which they have brought their farms, and the zeal with which they still continue to go on, can be reconciled on no other principle than this, that they are free from every kind of bondage, whatever may be its nature. Here, let not Mr T. S. admonish us, that tithes are only a grievance of their kind, and that improper clauses in tacks, slovenly farmers, or even the management of Mr Secretary Young, are also grievances in their way. This is a shifting of the question; a manœuvre, such as a skilful general makes, to divert the attention of his enemy from the principal object. If a thing is bad, nothing that is of less enormity can make it right. If there is a crying evil, which calls aloud for redress, I know not how pointing out other smaller faults will help us on to a cure. A landlord gets rid of a bad tenant as fast as he can. If Mr Young errs in his agricultural practice, I am sure, he wants not *line upon line, and precept upon precept*—all the correction which a free agent can, or ought to receive: But will this rid us of tithes? Only show yourself serious in trying to reform the abuse, and the whole body of the clergy is instantly on your top: the hue and cry is forthwith raised, that you are going to undermine our well-poised Constitution as it is established in Church and State; and you are from that day marked down as a Jacobin, a Democrat. This is the reason why the measure has not been carried into effect; not that men are stupid in crying down tithes, without taking any steps to get rid of them, as this gentleman tells us. He cannot be ignorant, that attempts have been made, aye and long before agriculture was half so much attended to as it is at the present day: but then the eloquence of the Order was roused, the sympathy of the people was wrought on, the thunders of the Church were hurled against the proposers of the measure, and, in short, the landed interest acted the part of the good-natured man with a scolding wife; they quietly gave up the cause, rather than be '*deaved with the din.*' Sure this gentleman is more stupid than he would have us to be, if he forgets that in every enclosing bill, every bill brought into Parliament for dividing and improving waste lands, an adjustment with regard to tithes, is invariably made a *sine qua non.*

I am well aware, that let a bill be brought into Parliament when it may, for commuting or abolishing tithes, strong and serious objections will be urged against it. All the *outs and ins, the buts and ifs*, brought forward by this gentleman in a string, will doubtless resound from every quarter against the measure. What could be expected in this instance, when even those bills

which Sir John Sinclair brought in during his presidency, which had been long and loudly called for, were ignorantly opposed? What could be expected, when you see our prints of the present day teeming with language such as the following? 'There is not a common in the kingdom,' said a London paper on the last day of the year which is but newly gone, 'which has not produced food for cattle, more or less, in proportion to the nature of its soil; not one on which cattle have not consumed every particle of food so produced. Many commons have been highly useful in rearing stock, many of them afford excellent pasture; cottagers still find an asylum upon them; and it is only there we can now expect to see any remnant of the once bold independent peasantry of England. If the present land-owners and farmers of England were at a loss to find out some method more effectual than another, to raise the price of provisions higher than they now are, they could not hit upon a better plan, than that of taking into their immediate occupation and disposal all the waste and common lands of the kingdom. They could then produce as little as they pleased, and fix their own price on every thing.' If such is the language yet held with regard to waste lands, what opposition, what strange inconsistencies, may not those who urge the abolition of tithes expect to meet? Indeed, the ingenuity with which your correspondent, and all his associates, shift from objection to objection, remind me of the story of Will-o'-the-Wisp mending his cloke. 'If it will not be this way,' said the spirit of the water, shifting his cloke, and fitting it first here, and then there, 'it will be that way, and if it will not be that way, it will be this way.' Were all this gentleman's doubts and fears held out to our late Premier, much as several people pretend to ridicule him for trying to divert his spleen by farming, he would despise them all; and, instead of shrinking from the discussion, he would there also, if properly supported by those whose interest it was to stand forward to his aid, shew himself the 'pilot who could brave the storm.' Fear not, then, ye land-owners, to lay a finger on tithes! Tremble not lest, while ye overturn the tottering fabric, ye should at the same time undermine the well-built pillar of the State. They have no connexion with each other; or, if they have, tithes are a part of the building, which is so ruinous, so dangerous to the rest of the edifice, as to require that it should be pulled down and built anew. Since the days of Henry VIII. the Church has undergone several useful alterations and repairs; yet still it is a Church, and still our free Government is not overthrown. Nor shall it be, by the measure which we now propose. Unhurt, it will be yet more strong; and it will

will be ſhewn to the world, to be a building which its enemies, with all their fury, may attack in vain.

Redouble then your exertions; calmly perſevere. In fine, never let the words of Æneas to his weather-beaten Trojans be effaced from your hearts,

'*Durate, et voſmet, rebus ſervate ſecundis.*'

I am, Sir, your, &c. W.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Culture of Turnips.*

SIR,

A Correſpondent who ſigns himſelf '*A Northumberland Farmer*' in the laſt Number of the FARMER'S MAGAZINE, having made remarks at ſome length upon my Letter of the 19th October 1801, inſerted in that work, I beg leave to offer ſome animadverſions upon his communication.

In the Letter alluded to, I merely aſſerted a well known fact, that in the vicinity of Ripon, in which deſcription I meant to include an extent of country containing many thouſand acres of land, turnips were (with few exceptions) ſown in *drills* at about twelve or thirteen inches diſtance in the rows. I further added, that I believed the farmers in Yorkſhire, upon land proper for growing them, were not inferior in the cultivation of turnips to thoſe of any country; and though this has been controverted by your correſpondent, and much ingenious argument employed in favour of the Scotiſh method of ſowing them in high ridges of twenty-eight inches diſtance in the rows, yet they have not made me a convert to his opinion.

We have had turnips cultivated, in the ſame manner as I ſuppoſe is done in Scotland, in ridges, dunged in the furrows by women and children, nearly the ſame as for potatoes; the ridges ſplit with a double mouldboard plough, and the ſeed ſown upon them with a drill: But this is almoſt entirely abandoned in favour of the drill fixed to the plough, and is now ſeldom uſed, but upon wet or very ſtiff ſtony ground, difficult to hoe, and which is very improper land to attempt to grow turnips upon.

I have ſome years ſince ſeen lands ſown after this method, and am fully ſatisfied that it is not, generally ſpeaking, more advantageous than the Yorkſhire, or, as your Northumberland friend is pleaſed to call it, the Ripon method; nay, I firmly believe, upon good turnip land, as large, or even a larger quantity of turnips may be produced, *per* acre, by the latter, than by the former method.

Your correſpondent obſerves very juſtly, that there is more than twice the number of rows in one acre of land in the Yorkſhire ſyſtem, than there is in the other. But I by no means agree with him, when he ſays, that when one is hoed for 4s. *per* acre, the other may be done for half a crown. The turnips may perhaps be made of a proper thinneſs, with reſpect to quantity, at an expence in that proportion; but no field can be ſaid to be properly handhoed, unleſs the land is moved by the hoe in every part, however diſtant from the plant. Indeed, in this county, it is a common practice for good farmers to hoe their fields completely over, even when ſome parts have failed to produce turnips, merely to pulveriſe the ground, and prevent the growth of weeds.

Your friend argues much upon the great benefit of uſing the horſe hoe; and, where it can be done effectually, I agree it is an excellent implement: But this is no argument againſt the Yorkſhire method of ſowing turnips, as we have hoes that may be ſet to any diſtance; and if the land is clear of ſtones, will hoe between the rows very well at twelve inches. I know not to what perfection they have invented hoes in Scotland; but I have not yet ſeen any, that could be uſed to any advantage, *acroſs the lands* in a *field growing turnips;* and as you ſow them in the North on high ridges, it appears impoſſible to do them ſo; and therefore they hardly can, I think, be properly cultivated without hand-hoeing *at leaſt once over.*

I really cannot underſtand how hand-hoeing, if properly executed, can be of leſs advantage to the land, than if done by horſes: The latter may be leſs expenſive; but perhaps the labour, trouble, and inconvenience attending the putting the dung into the ridges, is fully equal to that.

One very material objection to the Northumberland method, (in my opinion an unanſwerable one), is, the laying the land up in high ridges, which is a means of evaporating the moiſture from the earth, and of expoſing the young and tender plants, in a dry ſeaſon, to piercing cold winds, and the ſcorching ſun. I have formerly ſeen turnips ſo ſown, entirely eaten up by inſects and the fly, when thoſe done the other way were but little injured, their growth having been leſs retarded by dry weather. How your friend can make his turnips (where they are but 11 inches diſtant in the rows) as large as 8½ inches diameter, I acknowledge I am not able to find out. But ſuppoſe, for the ſake of argument (for I do not admit the fact) that there *is the difference* in the weight of the turnips your friend ſays, yet I contend, that they are not ſo advantageous to a farmer, as thoſe of a leſs ſize.

In good, well cultivated land, in the Yorkſhire method, if properly hoed, the root of the turnip will meet and cover the ground.

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Theſe are thought to be, and (generally ſpeaking) certainly are, better than thoſe that are larger, and ſet at greater diſtances; being leſs liable to receive injury from wet and froſty weather than large ones; and are not of ſo ſpungy a nature, but of a firmer and more nutritive quality. For the truth of this aſſertion, I appeal to any unprejudiced man who has fairly tried the experiment, whether he reſide in England or in Scotland. I am, &c.

A YORKSHIRE FARMER.

*Ripon, 13th January* 1803.

*P. S.*—Being diffident of my own opinion upon ſo important a ſubject, oppoſed to ſo able a writer as your correſpondent from Northumberland, after the above was written, I ſent it and the Magazine to a friend of mine (who has cultivated turnips with great ſucceſs for a number of years), and requeſted his opinion upon it. In anſwer, I received from him the following letter, in which is contained ſo much good ſenſe, ſound argument, and real experimental knowledge, that though his ſentiments and my own are ſomewhat ſimilar, I hope I need make no apology for tranſcribing it.

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DEAR SIR,

I eſteem myſelf under much obligation to you for the peruſal of the Farmer's Magazine. The work appears to be very judiciouſly conducted, and certainly is aided by a number of intelligent correſpondents; and in particular one, who writes largely on the different modes of cultivating turnips. Of this letter you deſire my opinion.

It is a very difficult matter, in comparing different methods of huſbandry, for a perſon entirely to diveſt himſelf of local prejudice. He is diſpoſed to think, that his own practice, and that of his neighbours, is the beſt that can poſſibly be followed. But, in order to form a true judgement upon the preſent ſubject, let us impartially examine it.

It is well known, that ſome men who have been looked up to, as the firſt agriculturiſts in theſe kingdoms (I mean the farmers of Norfolk), give a decided preference to the broadcaſt method of ſowing turnips; but it muſt be allowed by every one who has ſeen the Yorkſhire method of ſowing them, that it is ſuperior to the broadcaſt in every point of view: it is allowed to be ſo by the Northumberland farmer.

I readily admit and believe, that the Scotch drill will anſwer better than the Yorkſhire one, upon cold ſpungy land; but upon all fields properly called turnip-land, I believe every unprejudiced perſon will give a preference to the Yorkſhire one.

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The advocates for the Scotch drill aſſert—'That they grow their turnips to greater ſize, and likewiſe produce a ſuperior weight per acre.' The firſt will readily be granted; but the producing a greater weight upon a given quantity of land will by no means be conceded to them.

When turnips are ſown at a diſtance of 28 inches from row to row, and happen to plant badly, which will frequently be the caſe, then the general deficiency will be much greater in fields ſo managed, than in ſuch as are ſown in rows at only 12 inches diſtance.

I have frequently heard it aſſerted, that farmers in general are a ſet of men ſo obſtinately wedded to old cuſtoms, and ſo prejudiced againſt innovation, that even a certainty of advantage will hardly tempt them to deviate from the beaten track; but this, with reſpect to the ſowing of turnips, does not by any means apply to the farmers in this county: for the Yorkſhire drill was no ſooner invented, but its advantages over the broadcaſt method were generally acknowleged; and its uſe (with very few exceptions) became univerſal. We are no ſtrangers to the ſowing of turnips with the Scotch drill. Several perſons have made a trial of it; but the reſult was not by any means ſuch, as to eſtabliſh its ſuperiority over the mode now in uſe; and the practice is, I believe, nearly diſcontinued.

Some few years ago, I made trial of ſowing ſome of my turnips at double the uſual diſtance from row to row, by uſing two ploughs, one with a drill fixed to it, and the other without one; but, after following that method for two years, I reverted to my former practice, which experience convinced me was more beneficial. 'Tis true, my turnips with the wide intervals grew ſomething larger; but I found them on that account more liable to injury from the froſt, and likewiſe, after Chriſtmas, leſs nutritive than thoſe of a moderate ſize; nor had I any reaſon to believe, that my turnips with the wide intervals exceeded, or even equalled the weight per acre of the others, which were only 12 inches diſtant.

In eating turnips grown upon raiſed drills, a great proportion of the dung and urine of the cattle or ſheep, which falls in the hollow of the interval, muſt eſcape below the reach of the plough, and conſequently be loſt; which will not be the caſe when turnips grow upon a level ſurface. It is alſo well known to thoſe who are accuſtomed to eat their turnips with ſheep, that this animal, by rolling itſelf upon its back, will ſometimes get into ſuch an awkward poſition, as not to be able to recover its feet; and if not found and releaſed in a proper time afterwards, dies; and as this, upon a level ſurface, generally happens in the furrow,

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ſo the intervals of the raiſed drills preſenting ſo many furrows, muſt make the danger proportionally greater.

When it is conſidered, that, in this part of Yorkſhire, we grow turnips that yearly feed vaſt quantities of cattle and ſheep of our own breed, as well as ſeveral thouſands of ſheep from Northumberland, we ought, if experience can be ſaid to teach people any thing, to be allowed to know ſomething of this buſineſs; and having made trial of the three different modes above mentioned, we certainly ſhall hold to that which we think is beſt.

It is not every farmer who *can reſort to mathematical* calculations to found his opinion upon; but a man of common ſenſe can make a comparative eſtimate of the value of a crop, according to the greater or leſs time that it will maintain a given number of ſtock. Could the farmer plant turnips upon his ground, and grow them to a given ſize with equal facility, as the mathematician can calculate their weight upon paper, we ſhould then have it in our power to make proper concluſions without danger of miſtake; but as it will not be ſo, I only wiſh the Northumberland farmer was in this neighbourhood at preſent, to convince himſelf, by ocular demonſtration, that the modes of other counties may be equal to his own.

The above is my real opinion reſpecting the different methods of cultivating turnips. I am highly flattered to find it agrees ſo nearly with yours. I am, &c.

*Remarks on the above by the Conductor.*

The culture of turnips forming a material branch of rural œconomy, the opinion of the Conductor may perhaps be expected by the readers of this work, now when the ſubject has been ſo ably diſcuſſed by correſpondents on each ſide. The following curſory remarks are therefore offered.

Turnips have been partially cultivated in Britain for a century paſt; but, ſince 1770, this root has gradually ſpread over every quarter of the iſland. Two objects are in view when turnips are raiſed; firſt, to clean the ground; ſecondly, to prepare winter food for cattle and ſheep. Both objects are of great importance, though undoubtedly the firſt claims the precedence; for if the ground is not ſufficiently cleaned when carrying a crop of this root, the whole of the after rotation is neceſſarily injured.

If it is admitted that the beſt method of cultivating turnips is the one that cleans the ground moſt effectually, then we ſhould think the queſtion is determined in favour of drilling, at ſuch intervals as allows the horſe-hoe to be ſufficiently uſed. By a horſe-hoe,

hoe, we mean either the Dutch hoe, provincially called a ſcraper, or a ſmall plough of the ordinary conſtruction, drawn by one horſe; and ſuch cannot in any ſoil be ſucceſsfully applied, unleſs the intervals betwixt the drills are from 24 to 30 inches. Horſe-hoeing at leſſer diſtances is a perfect mockery; and no hand labour, unleſs it is given at a rate of expence exceeding cuſtomary profits, can equal the benefits ariſing from introducing horſe-hoeing, where turnips are extenſively cultivated. We preſume it is underſtood, that the hand-hoe is uſed to ſingle out the plants, and to clean the ſide of the drills before the laſt horſe-hoeing is given.

Our opinion is therefore decidedly in favour of drilling turnips—this mode permitting every branch of the management to be executed in the moſt perfect way. The plan defended by our Yorkſhire friend is confeſſedly ſuperior to the ancient way of ſowing broadcaſt, though ſtill, as the benefit of horſe labour is not gained, or at leaſt in a very imperfect manner, it muſt be conſidered as inferior to the northern ſyſtem. If the aboliſhment of naked ſummer-fallow on all the lands capable of carrying turnips is intended, it can only be ſafely executed by a ſteady adherence to the mode pointed out by our Northumberland correſpondent. When in Yorkſhire, we learned that a conſiderable proprietor would not take broadcaſt turnips as a fallow crop, and we judge he was in the right.

Whether a greater or leſſer crop of turnips will be procured from drilling than from broadcaſt, is a queſtion often agitated. In our opinion, the iſſue is immaterial, unleſs it can be ſhown that both modes admit the ground to be equally well managed, which is the true criterion for determining their merits. We do not entertain a doubt, but that it is practicable to raiſe as heavy, nay even a heavier crop in the broadcaſt faſhion, than by drilling, if the plants are very carefully ſingled out; but that ſuch care can be univerſally beſtowed, would be the height of folly to expect. In many counties, the rate of population would not permit ſuch a meaſure to be attempted: hence, horſe labour becomes abſolutely neceſſary, if turnips are to be extenſively and ſucceſsfully cultivated.

We muſt remark, that our Yorkſhire friend ſeems imperfectly acquainted with the drill huſbandry, otherwiſe he would not have aſſigned diſadvantages to it which do not exiſt. The ridges are generally formed with two bouts of a plough in the firſt inſtance, before the dung is ſpread into the furrow; and this ridge is reverſed or ſplit, not by a double-moulded plough, but by two bouts of the ſame implement which originally formed it. The height of the ridge is very trifling; for by the application of a light roller, both before and after ſowing, the ground is nearly

ly brought back to a level. The expence of ſpreading the dung into the drills is very little more than when it is ſpread on the ſurface at large; and this trifling difference (not ſixpence per acre) is ten times more than compenſated by the extra benefit gained by the crop, in conſequence of the dung being completely covered in. It is not cuſtomary to earth up turnips, unleſs when they are grown on wet lands, as ſuch a practice prevents the root from ſwelling in ſize; conſequently the danger to ſheep, when fed upon turnip fields, apprehended by our correſpondent, can very rarely take place.

Though our opinion, on this ſubject, coincides with what was given by the Northumberland farmer, yet we muſt acknowledge that the arguments uſed on the other ſide, by our Yorkſhire friend, are ingeniouſly and ably ſtated. They diſplay conſiderable knowledge in the practice of agriculture, and prove the writer poſſeſſed of an ardent, though miſtaken deſire to promote the welfare and proſperity of that ſcience. N.

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FOR THE FARMER'S MAGAZINE.

*Account of the Peat Moſſes and Shell Marl on the Eſtate of Dunnichen in the County of Forfar. Extracted, by permiſſion, from a Manuſcript Hiſtory of Peat Moſs, by Andrew Steele Eſq.*

THE changes that have occurred, and the revolutions that have taken place during ages, and are ſtill in their progreſs, in the filling up of the vallies of the earth, cannot perhaps be more beautifully diſplayed to the philoſophic eye, than by examining Reſteneth peat-moſs, the property of George Dempſter Eſq., in the pariſh of Forfar.

Situated 200 feet above the level of the ſea, in a hollow from which the water of a copious ſpring hath had no clear and ſufficient iſſue, this peat-bog, conſiſting of about 70 acres, muſt have been once a lake. Indeed, that is ſufficiently obvious, not only from its connexion with a very conſiderable lake, called Reſteneth Loch, almoſt a mile in length, but eſpecially from a bed of ſhell marl found beneath the peat, and ſituated immediately above the ſolid ground. The bed of marl (of which ſubſtance there is alſo a great quantity found in Reſteneth Loch) is in ſome places 15 feet in thickneſs, gently diminiſhing towards the margin of the moſs. Its average thickneſs is about 5 feet; but the layer is very irregular. On diſſolving a portion of this marl in the muriatic acid, I found it a very pure calcareous matter, containing only about a tenth part of its weight of peaty and other ſubſtances.

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The ſhells compoſing the marl, many of which are quite entire, are of the water ſnail or cochlea kind. (*Helix Putris*, Lin.)

The great value of ſuch a bed of marl ought to be a powerful inducement to every one that poſſeſſes any moſs grounds to ſearch them carefully, and particularly in their deepeſt receſſes, and even beneath their immediate ſubſoil, for this important article of manure.

Mr Dempſter hath ſold from the bottom of this moſs, marl to the extent of upwards of 12,000l. Sterling, or at the rate of 1000l. *per annum*, ever ſince the period it was drained, which is about twelve years ago: and the quantity that remains is yet very great.

The immenſity of time that I apprehend it would take to form ſo vaſt a collection of ſuch minute ſhell animals is beyond our conception, if we might be permitted to judge from natural cauſes and effects.

This valley, when it ceaſed to be a lake, from circumſtances now to us incomprehenſible, unleſs the vaſt accumulation of ſhells can be deemed a ſufficient cauſe, ſeems to have acquired a ſurface fit for the production of trees: for all the under layers of the moſs, next to the marl, are compoſed of roots, ſtems and branches of alder, birch, hazel (with the nuts of this laſt tree externally entire), and ſome oaks of conſiderable ſize.

It hath been ſuppoſed poſſible that this collection of trees may have been floated from the higher grounds; but it is not probable that all theſe trees could be depoſited in this manner, as there is no appearance of any rivulet having ever run into the valley. It may rather be preſumed that the ſediment of water, percolating from the adjacent grounds, may have formed above the marl a ſoil proper for the growth of trees.

From a wood the valley muſt have been transformed into a peat bog or moſs, probably by a ſtagnation of water which would naturally occaſion the deſtruction of the trees and the growth of aquatic plants, which, in ſuch ſituations, accumulate and never fall into a ſtate of total decompoſition. The peat matter is found about ſix feet thick above the marl, and at the time of the drainage its ſurface was covered over with heath.

By drainage and the conſequent alteration of the nature of the ſoil, the heath has been entirely obliterated, and the moſs, even at the ſurface, formed into a fine light mould, and covered with graſs, coarſe indeed in general; but where it hath been gravelled for a road, it is not unworthy of notice, that it is ſwarded at the ſides with the fineſt paſture graſſes and clovers: Couch graſs or twitch (*triticum repens*) was there alſo particularly obſervable.

This moſs hath been drained by one deep cut through the middle

middle of it, and through a ſand bank of the depth of thirty feet which obſtructed the iſſue of the water. The drainage, however, having been intended for the purpoſe only of obtaining the marl, no artificial general improvement of the ſurface of the ground has yet taken place; but by every appearance, when it ſhall be done, the crops afforded will be uncommonly luxuriant, from the decompoſed nature of the moſs, cauſed by its being ſo long in a drained ſtate. Mr Dempſter hath encloſed, levelled and dug over with the ſpade about ſix acres of it, which he means to ſow with graſs ſeeds next ſpring, without any corn crop.

Here are obſervable ſome holes which had been dug to the bottom of the moſs, containing ſtagnated water, but now almoſt filled up again, to the level of the general ſurface, by bog moſs or fog *(ſphagnum paluſtre)* not yet ſolid; a plain example of the quick reproduction of peat matter by the growth of vegetables of the moſs or *muſci* tribe.

It is alſo to be remarked, that the peat earth at the bottom of this moſs, which appears to have a ſmall mixture of clay, is very ſolid, and, when cut into peats and dried, makes excellent fuel; and Mr Dempſter obſerves that firm peats of this ſort, and particularly what is found on ſome of the Highland grounds of Scotland is very little inferior to coal. He burns ſuch peats commonly himſelf, and has ſold many hundred pounds worth to his neighbours from this moſs. Their aſhes alſo are valuable for manure, and, by ſlow and confined combuſtion, may be produced from the peat in conſiderable quantity.

The moſs of Dunnichen in the pariſh of the ſame name, now partly under culture, is ſituated near four hundred feet above the level of the ſea in a ſmall valley kept wet, like that of Reſteneth, by a copious ſpring of water, and alſo by ſurface waters deſcending in rainy ſeaſons from the higher grounds.

It conſiſted of fifty-nine acres, moſtly of peat ſoil, ſhallow at the margin, but deepening to fifteen feet towards the middle. The drainage of it, which was accompliſhed forty years ago, at the expence of 50l., was originally intended merely for the purpoſe of procuring, more eaſily, peats for fuel, of which the country ſtood in great need. Beneath the peat ſoil was found, on cutting a deep level, a layer of ſand mixed with a little mud, ſix feet thick, and, immediately under the ſand, in ſome places, beds of marl, mixed, however, conſiderably with ſand.

On the ſubject of marl as connected with moſs, it may not be improper to obſerve, that though the common practice of ſearching for marl is by the boring irons uſed in trying for coal and other hard mineral ſubſtances, yet Mr Dempſter very judiciouſly adviſes rather to make uſe of a long wooden pole for this

this purpoſe, with an iron auger fixed to its end. This makes the operation of boring for marl both cheap and eaſy. A pole of twenty-five feet, he thinks, will, in general, be of ſufficient length. If the moſs be found to be deeper than this, it is eaſy to join another pole to the firſt, or to obtain a new one of a greater length.

Shell marl is found in the bottom of the generality of lakes, and of meadows and moſſes which have once been lakes, throughout Great Britain and Ireland. It is the remains of myriads of thoſe ſorts of ſmall teſtaceous animals which commonly inhabit pools of water, and have lived and died in thoſe ſituations.

Some of thoſe ſhells are univalves, (generally *Helix*, *animal Limax*, Lin.) others are bivalves, (generally *Tellina*, *animal Tethys*, Lin.) and are frequently very entire when taken up; but after a ſhort expoſure to the atmoſphere, they crumble into a fine whitiſh powder which effervefces with acids, and is, in fact, no way different from powdered limeſtone. It is commonly more pure from foreign and uſeleſs ingredients than moſt limeſtones. Some moſs marl, examined by Dr Coventry, Profeſſor of Agriculture at Edinburgh, was found to contain 84 *per cent.* of pure chalk or carbonate of lime, which is more than lime generally poſſeſſes, and the refuſe of the marl was chiefly peaty ſubſtance, which makes the refuſe of ſuch marl of more uſe as a manure, than that of limeſtone, which is generally ſand or clay.

Shell marl may be converted into quicklime by burning. Its ſolution changes vegetable colours to green, and it poſſeſſes all the other properties of quicklime, and, as ſuch, is uſed for building in many places of England.

De Pagès, in his travels, mentions that the inhabitants of the South Banks of the Miſſiſſippi make oyſter ſhells ſerve all the purpoſes of limeſtone. And lands that receive manure from towns where much ſhell-fiſh is uſed, or that have ſhells in their ſoil, naturally, or by being brought to them from a ſhelly ſea ſhore, ſtand in no need of lime for their culture, and are not at all benefited by it.

Some naturaliſts, indeed, believe that all limeſtones, marbles, and other maſſes of calcareous ſubſtances, are derived from the remains of animals, and conſolidated either in conſequence of fuſion by heat, or ſolution in water; and ſome of the fineſt limeſtones and marbles ſhow, unequivocally, that they are a congeries of ſhells of the ocean. Beds of theſe materials are frequently found near the ſummits of mountains, in which the ſhells that compoſe them can be diſtinctly traced and enumerated by the naturaliſt.

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As a manure, ſhell marl uncalcined is therefore to be uſed as lime; but in that ſtate, it is not ſo minutely diviſible, nor ſo ſoluble in water, and of courſe more tardy in its operation; of conſequence, however, it remains much longer in the ſoil than quicklime. On the comparative value of ſhell marl and lime, Mr Lummis, in an eſſay quoted in Maxwell's Huſbandry, remarks, 'Notwithſtanding that lime is ſo very good manure, yet I prefer marl to it; becauſe, laſting five times as long, it is in the end much cheaper, although ſometimes it is more chargeable at firſt than the other.' Likewiſe, it is obvious that the quantity of calcareous matter in a boll of ſhell marl is more than double that in a boll of powdered quicklime. The price ought therefore to be more than double.

When Dunnichen Moſs was drained, it muſt have been covered with heath. The heath-turf, and the remnant of the ſtems and floriferous parts of the heath plants, are yet found every where on the ſurface. It had afterwards, however, from being long drained, acquired a ſward of coarſe graſs. Beneath, there are found birch and alder trees, and large oak roots, fixed in the ſand, with the remains of muſci, ruſhes, ſedges, and flags. Before the improvement of the ſurface was firſt conceived, it had been cut every where into deep pits for fuel. The levelling and digging of the ſurface of that part of it now improved, therefore, became the firſt neceſſary operation. It was all dug over and levelled with the ſpade, and diviſion-furrows, 30 feet diſtance, were made, down to the ſand, for carrying the water into the main drains. Theſe operations, by reaſon of its inequality of ſurface, coſt 4l. per acre, amounting to about 69l. for digging and levelling near ſixteen acres, in ſummer 1800. In ſpring 1801, theſe grounds were ſown with early oats, except a quarter of an acre planted with yams. The yams had dung adminiſtered to them; and though their haulms were cut off, after they had ſprung up, by a froſt, that did not affect the potatoes in the higher grounds, yet they grew up again, and a crop was produced more weighty by double than on any of Mr Dempſter's beſt fields that ſeaſon. The oats, indeed, which received no manure whatever, were too rank, and therefore lodged. The produce was ſixty bolls Linlithgow meaſure, eſtimated at 15s. per boll; amount L. 45 0 0
The yams amounted to 12 bolls of 20 ſtones Dutch weight each, at 5s. per boll - - 3 0 0

L. 48 0 0

Deduct the expence of ſeed, and the labour of harrowing - - - - 14 0 0

Gain on the firſt year's produce - L 34 0 0

For the ſecond year's cropping, the moſs carried a plough and horſes, even on the places that had been hollowed by pits. It was ſown with early oats, except one acre with flax. The whole was laid down with graſs ſeeds. Though the produce of this crop of oats has not yet been aſcertained, it is preſumed it will be more than laſt year. It ſhall, however, be here put down the ſame as it was aſcertained to be laſt crop, viz.

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| 60 bolls at 15s. - - - | L. | 45 | 0 0 |
| Lint - - - - | | 15 | 8 6 |
| | L. | 60 | 8 6 |
| Deduct the expence of ſeed and labour - | | 25 | 8 0 |
| Gain on ſecond year's produce - - | L. | 35 | 0 6 |
| Add gain on the the firſt year's produce - | | 34 | 0 0 |
| | L. | 69 | 0 6 |

From this ſtatement, it is obvious that an yearly rent of above 30l. is, by the improvement of ſixteen acres of this otherwiſe uſeleſs piece of moſs ground, added to the produce of the eſtate in future; the two firſt years crops being ſufficient to repay the expences incurred in improving it.

It is to be remarked, that the laſt crop of oats was ſo ſtrong, as to deſtroy partly the ſown graſs. This may be avoided, by ſowing the ground, in future, with graſs ſeeds in April or May, without a corn crop. Some patches alſo of the moſs that had been hollowed for fuel, and levelled with coarſe peat turf, ſeem to have had but a thin crop. That loſs might have been avoided, probably, if peat aſhes had been mixed with the ſoil on the ſurface, or a top dreſſing, of an inch thick, of ſand or earth had been given it, or perhaps by heavy rolling alone. Nothing ſeems neceſſary farther for rendering a peat bog, that has been ſo long drained as this, a better or more productive ſoil. The crop of graſs on it at preſent is moſt luxuriant; indeed, it is ſo beyond belief; but it is partly fine natural graſs, the ſown graſſes having been in ſome places deſtroyed by the over luxuriance of the crop. It remains doubtful to Mr Dempſter, whether, from its appearance of producing ſo great quantities of good graſs, he will let it remain for paſture, or admit it into a due rotation of crops, as part of his farm.

Mr Dempſter remarks, that the cultivation of the moſſes of Scotland cannot fail to contribute greatly to the fertility and richneſs of the kingdom; and that it ſeems to be one of the ſafeſt ſpeculations in which a proprietor or tenant can employ his money, more eſpecially ſince experience has proved that the mere act of draining moſſes is the principal expence attending their

their improvement; for while lime or other calcareous manures were underſtood to be neceſſary, the diſtance of many moſſes, from theſe articles, as well as the expence of purchaſing them, might naturally deter prudent people from the undertaking.

As to the growth of trees on drained moſſes, Mr Dempſter obſerves, that on the dry parts of the moſs of Reſteneth, the Scotiſh firs, the ſeeds of which had been blown from ſome neighbouring plantations of that wood, took root, and grew very kindly, though they have ſince been deſtroyed by the paſturing of cattle in the moſs, after attaining the height of two or three feet.—*Oct.* 1802.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Cheviot Sheep.*

SIR,

BEING in the conſtant habit of reading your valuable publication, from which much uſeful information may be obtained, and from which it may be expected the public will derive both great and beneficial effects, I cannot help offering you ſome obſervations on the letter from a farmer in one of the northern counties of England, dated the 4th of October laſt, inſerted in the fourth number of your third volume. That there was not any Cheviot ſheep brought to the teſt at the laſt Camptown ſhew, was a matter of deep regret to the members of the Cheviot Society; not only as it afforded an opportunity of attributing it to cauſes prejudicial to their breed of ſheep, but alſo as it deprived them of giving a public proof of the goodneſs of the breed. It aroſe from circumſtances purely accidental, but well underſtood in that part of the country; and I am confident, that thoſe who are at all acquainted with the circumſtances alluded to, will not ſuſpect that it was owing to any apprehenſion that the Cheviot ſheep could not ſtand in competition with the black-faced, or from any fear of diſgrace from the South Down, or even the new Leiceſter breeds. Repeated experiments have completely eſtabliſhed the ſuperiority of the Cheviot breed over the Foreſt, and all other kinds in highland ſituations; and it may be admitted, as a proof of this aſſertion, that the demand for Cheviot ſheep to other Highland diſtricts, has increaſed every year ſince they were firſt introduced; and the demand for them this laſt, as well as the preceding year, was ſo great, that it could not be ſupplied. The idea, that Cheviot ſheep will not feed at an early age, (ſeemingly adopted by your correſpondent), and propagated by ſome popular writers, to the prejudice of that valuable breed of ſheep, repeated experiments have proved ill-

founded. But ſhould that gentleman, or any other advocates of that opinion, with to have a public proof, there are breeders of that ſtock who, whenever called on, will not ſhrink from making the trial. I am, &c.

*A Cheviot Breeder.*

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the nature and management of the ſhort ſheep; with remarks on the difference between them and the Cheviot breed.*

SIR,

OF all the animals which this country produces, none is of more public utility, or private advantage than the ſheep. Conſidering its mountainous range, the coarſeneſs, and otherwiſe uſeleſsneſs of the paſture on which it feeds; and the little expence neceſſary in managing, and keeping up a ſtock, when compared with its real value, it may ſurely be reckoned the moſt valuable animal that theſe kingdoms can boaſt of.

Nature has very much diverſified the ſoil of this country, and has alſo ſo varied the properties of this animal, that each kind may be brought to a ſtate of the higheſt perfection, in its reſpective ſoil, that the ſpecies is capable of attaining to; and the greateſt difficulty of management ſeems to be in ſtocking the ſoil with that particular kind which it can bring to, and keep at, the higheſt ſtate of perfection.

I am well aware of the ridicule that will be thrown upon me, and the impolicy with which I will be charged, for eſpouſing the intereſts of that kind of ſheep, which the prevailing taſte of the times in general, and ſo many able ſtoremaſters in particular, have, as it were, combined to extirpate: but whatever becomes popular, the bulk of mankind is often forward in adopting, and years, at no great diſtance to come, will prove the fallacy of their too haſty meaſures, and the miſtakes of their immature proceedings. Such is the rage for ameliorating the quality of wool (for another property the animal has not) that a purchaſe is annually made of Cheviot rams for croſſing the ancient, or Foreſt breed *; but

* The Foreſt Breed, Linton Breed, or Short Sheep, are all different appellations of one kind. They are called the Foreſt Breed, from their being found in great plenty and perfection in the county of the Foreſt—the Linton Breed from the diſtrict around, and a weekly market held there in July, which is chiefly compoſed of that kind; and the Short Sheep, to diſtinguiſh them from the Cheviot Breed, that is much longer in the body.

but it is not poſſible, conſidering the nature of the animal, ſoil and climate, that they can ever have a ſtock equal in healthineſs, and hardineſs, to that they are now reſolved on the deſtruction of. I pointedly aſſert, that to lay the foreſt breed upon a farm where the ſoil is dry, and the expoſure warm, argues as much ignorance in farming, as laying the Cheviot kind upon a high, wet, ſtormy paſture, indicates imprudence; for it is abſolutely certain, (though the current report, and opinion of the times ſays otherwiſe), that the Cheviot breed neither will, nor can feed upon ſuch coarſe paſture as the Foreſt breed. The Cheviot breed is naturally more luxurious, more indolent, and conſequently more tender and delicate, than the other, and either taſtes very ſparingly of, or altogether rejects what the other voluntarily chooſes, and delights to feed on. The Cheviot kind, laid upon a proper ſoil, will, no doubt, feed to a greater weight than the foreſt breed, upon the moſt ſuitable ſoil that can be found; yet give them both an equal chance in the rearing, and after management upon a cold, wet, and ſomewhat ſtormy farm, (and many of our highland farms are of this deſcription), and the ſhort ſheep will be conſiderably heavier. I ſpeak not this from prejudice; it comes daily under my obſervation, and has for a courſe of years been exemplified in a fair and complete trial.

Certain domeſtic conſiderations make it imprudent at this time to ſay where, and how the experiment was made: but perhaps I may explain the proceſs of management more preciſely, whenever theſe conſiderations are no more. The reſults of my obſervations are theſe: The Cheviot breed are remarkably fond of paſturing on ſoft tathy places, but have an unconquerable averſion to feeding upon ſtrong coarſe meat,—they are very indolent, and, when ſnow is upon the ground, their utmoſt exertion is to occupy ſuch places as have been broken by the natives,—they ſhrink diſpirited from the ſleety blaſts of ſpring, while the ſhort ſheep ſet out with great activity for the moſſes, where they gather ſuch clean and wholeſome quick meat as ſoon re-invigorates their exhauſted ſtrength. In ſhort, the ſoil being incapable of carrying the animal to that perfection and ſtrength its component parts require, its growth is limited to the efficiency of the ſoil, or rather to their partial and unequal way of paſturing it.

I am no advocate for the ſhort ſheep farther than continuing them upon farms, where it would be improper to introduce the Cheviot breed; and, though the ſtrenuous advocates for the latter contend, that they will anſwer upon almoſt any ſoil in Scotland, yet the practical farmer, who has tried the experiment, knows the contrary. They may as well alledge, that the weakly

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and ſlender ſtructure of the butterfly, is as well calculated to ſtand the froſts and ſeverities of winter, as the hardy Moor Cock, becauſe they are both to be ſeen on our mountains in the ſummer months. The diſparity is not ſo great in the one caſe, as in the other, but ſtill there is a great difference.

I come now to make a few obſervations on the nature and management of ſhort ſheep. The conſtitution of ſheep in general is congenial to, or rather formed from the qualities of the ſoils on which they feed. If the ſoil be graſſy and ſoft, with little proportion of coarſe meat intermixed, it produces a ſheep conſiderably large, but of a ſoft unwieldy conſtitution, eſpecially at an advanced age. If the ſoil be heathy, and dry with little lathy paſture, the ſtock will be ſmall and hardy; the hogs perhaps liable to the *ſickneſs*. Hence it is evident, that the ſtoremaſter ought to be as complete a judge of the ſoil, as of the properties of the animal he intends to ſtock it with. He ſhould firſt conſider whether it is beſt adapted for feeding, or breeding; or whether it be of ſuch a nature as will warrant him to make the article of wool, a diſtinct conſideration; for wool as certainly partakes of the quality of the ſoil, as water receives a tincture from the land through which it flows. Wool Staplers, however, make little difference in the general price of ſhort wool; and therefore I think the ameliorating this article, not worth the farmer's diſtinct conſideration, eſpecially as he muſt forego advantages more important. His attention, then, is directed between breeding and feeding. Some farms indeed will anſwer both plans indifferently, but they will excell in neither; and, though it is practicable to raiſe a ſtock, ſufficiently ſtrong to ſtruggle with the ſeverities of winter, upon a farm of any of theſe deſcriptions, yet one for breeding has always the advantage, in point of healthineſs; *ſickneſs* among the hogs excepted. If a farmer then purſue this plan, independent of every other conſideration, he will raiſe his ſtock to the greateſt degree of ſtrength, beauty, healthineſs, and vigour, to which the ſpecies is capable of being carried; while, at the ſame time, he will augment the quantity of his wool, (though it may become worſe in quality,) the pile being thicker, longer, and conſequently heavier.

The lambs from which a ſtock is to be raiſed, ſhould have the following qualities: They ſhould be ſtrong and well made, the face black, but not of a jet black, as this is apt to throw the offſpring into ſpots; but when it is faintly intermixed with a dark white, it may be conſidered as the true foreſt breed. Faces that are clean white, or of a dun colour, are by all means to be avoided; the former being allied either to the Cheviot breed, or

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to the old Scotch * kind, the latter having a tendency to deteriorate the breed beyond that any can conceive. The greater the similarity in colour betwixt the face and legs, the truer is the kind, let it be of what description it will. The forehead ſhould be rough, the horns ſhould be well turned, and the ribs arched; and indeed the horns and ribs naturally bend into the ſame poſition.

Much attention cannot be paid to the wool in a breeding ſtock. To have the ſheep equally clothed is a principal article, as the wool is apt to turn ſhort upon the ſhoulder, an imperfection to be guarded againſt; as it announces that ſuch individuals and their offspring will degenerate into long-bodied ſmall fore-quartered animals; and inclines me to think that this is their form in an undomeſticated ſtate, as it requires care and attention to keep them from reverting to it.

But as it is principally from the ram that a ſtock receives its general mould and ſhape, the ſelection of a right kind is far from being unimportant. The qualities of a good ram are, Long and well-turned horns, a long black face, fore-head rough and ſlightly tinged with brown, cheſt ſtraight and long, noſe long and noſtrils wide. When the noſe is ſhort, and the noſtrils ſtrait, it is a certain ſign of a dwarf, and when the face is a bare jet ſpreading directly to the fleece, it indicates that the diſtant poſterity will be liable to adventitious ſpots.

A head thus exactly filled rarely fails of having a carcaſe every way proportional, as the general ſpread of the head is indicative of the general mould of the whole ſyſtem; the properties of which ſhould be, The fore-quarters deep and heavy over the ſhoulders, the neck ſhould bend upwards a little, ſhould be well clothed with wool, cloſe to the horns and cheek; the back ſhould be ſtraight; the ſhoulder a little higher than the back; the bend of the ribs wide; wide above the ears, which is a genuine mark of a true ſhort ſheep; and free from grey hairs in the tail.

If a farmer wiſhes to keep the forelt breed entire, wool muſt not be even a ſubordinate conſideration. I would regard it only in ſo far as it teſtifies the purity of the breed; for a ſingle croſs with Cheviot rams, will do infinitely more for ameliorating this article than the moſt ſkilful management for a long courſe of years. I ſhall only obſerve, that the wool ſhould be thicker and cloſer in the pile on

* This alliance has been formed at a very remote period; but when a ſheep of this deſcription happens among a ſtock, it evidences the blood to be tinctured, and its tendency to throw is inconceivable. For example, a black or ſpotted ewe will have a lamb nothing diſcoloured; its produce again will ſtill be white, but in the fourth or fifth generation its propenſity to throw after its black or ſpotted anceſtor will be invincible, and will continue for a ſeries of years, till the colour change to that of the reſt of the ſtock.

on the male than on the ſtock, equally laid on, and as free from a mixture of grey hairs as poſſible, as they are more congenial to the nature of ſheep than ſpots, and more apt to be communicated to the produce. I am yours, &c. A. S. L.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *The Improved breed of Sheep defended.*

SIR,

ALTHOUGH I feel myſelf very incompetent to anſwer your correſpondent Epicurus, in ſuch high-flown epithets as he has made uſe of, I, however, conſider it a duty which I owe to myſelf and my country, to give anſwers to ſuch parts of his remarks as I am able.

*Firſt*, Reſpecting Mr Brodie of Upper Keith. Although I never ſaw the advertiſement referred to, I cannot help thinking that Mr Brodie has ſhewn true ſpirit and enterpriſe, in giving conſiderable prices for ewes and tups, by way of introducing a moſt *valuable* breed of ſheep into Scotland; as I hope to prove, if not to Epicurus, to all your impartial readers, before I have done with theſe remarks.

I may be wrong informed, but I have it from good authority, that Mr Brodie has in every branch of agriculture acted with uncommon ſpirit, and great exertion. And if it be true, as I have alſo been told, that he has benefited himſelf by thoſe exertions, I have not a doubt but he will benefit himſelf ſtill more by introducing this breed of ſheep, which is perhaps much wanted in Scotland. Now, "if a man deſerves well of his country, who raiſes "two blades of graſs, or two ears of corn, where only one would "grow before;" is he not alſo deſerving of praiſe who produces two pounds of *mutton* where only one was formerly produced? And that this was the caſe with the celebrated Mr Bakewell, who was the firſt ſelector and promoter of this invaluable breed, I believe few will deny, who either are acquainted with that breed, or have taken any pains to inform themſelves of its merits. And, if what I have now ſaid be right, then not only Mr Brodie, but every man, who, in a rational way, endeavours to diſſeminate that breed deſerves well of his country.

But I do not mean to conteſt with Epicurus, the ſuperior taſte or delicacy of the mountain mutton, or the more claret-like colour, or higher *flavour* of the *gravy*. I only wiſh to recommend a kind of mutton ſuited to the vulgar taſte of *a Newcaſtle Coal-heaver*, and adapted to ſupport the exertions of thoſe laborious

rious claſſes, not only of *Coal-heavers*, Keelmen, and Pitmen, about Newcaſtle and elſewhere, but every Miner and Fabricator, from Cornwall ſouthward to Caithneſs northward; a ſet of men, without whoſe induſtry the Epicureans would not be ſo able to indulge their nicer palates with a ſheep bred upon the mountains! extremely uſeful in their way, but not at all calculated for the Champaign parts of Britain. Nor do I believe that I hazard too much, if I ſay that a time will come when the improved breed will occupy all the lower hills in the iſland, as well as the low lands.

I know it to be a fact, that many of the Cheviot Breeders are at preſent croſſing their ſheep with tups from theſe animals, whoſe fleſh is only fit for the digeſtive powers of a *coal-heaver!* and I am diſpoſed to think, that if Epicurus were to happen to taſte ſome of the mutton of theſe ſheep, which have been produced from a croſs with the new Leiceſters, without being previouſly informed, he would not be able to diſcover the *contamination*.

Epicurus muſt permit me to ſay, that the new Leiceſters are very far from being a coarſe grained breed: the old Lincolnſhire breed is certainly ſo, which may have led him wrong. But I am firmly perſuaded, that the mutton of the New Leiceſters is equally as fine grained and *marbled*, as that of any mountain ſheep whatever. Obſerve, I do not pretend to ſay that this mutton is ſo fine flavoured, but I preſume, that the mountain ſheep are indebted to the kind of herbage which they are depaſtured on, and alſo to the age they are kept to, for that particularity. Beſides, I neither know how the farmers in England would be able to pay their much advanced rents at this time, nor how the numerous claſſes of *coal-heavers*, miners, or manufacturers, &c. ſpread through every part of Great Britain, would be ſupplied and ſupported with animal food, were it not for this invaluable breed of ſheep, for which this Iſland is ſo much indebted to the memorable Mr Bakewell: and I rejoice to hear, that the manufacturers about Paiſley and Glaſgow, &c. are now beginning to eat this *odious* mutton, with its *oleaginous* covering! and I have no doubt, but the Aberdeenſhire manufacturers will learn by and bye to eat it: becauſe, as the turnip huſbandry ſpreads northwards, which it neceſſarily will do, theſe ſheep will follow.—Epicurus muſt ſuffer me to inform him, that it not only is the moſt nutritive to theſe laborious claſſes of people, but much cheaper than any other animal food whatever; and for this obvious reaſon, that no other animal food, (if we except bacon) affords ſo much fleſh in proportion to the quantity of bone. And I hope to gratify Epicurus, by informing him, that the fat is frequently cut off from the ſurface of theſe animals,

mals, "but not by the butchers before they bring it to the market, for the purpose of making soap and candles," but is taken from off the fattest parts by these said manufacturers, then shred and put into dumplings, a most nutritive, excellent, and, I am persuaded, wholesome dish, of which I have eaten many a time with great pleasure, and with a natural, *unvitiated* appetite, produced by hard working. Nay, I can tell him more, that the writer, when hungry from the plough, has frequently dipped *toasted bread* into the drippings of this *delicious* mutton, whilst roasting at the fire, and then eat the bread with pleasure and avidity! Epicurus must allow me to put him right also in one other article: Mr Brodie never did breed what is known by the name of house-lamb, but by some means best known to himself, had the address to make the ewes of this very breed, which Epicurus has so much abused, take the tup at a very early season, so as to bring the earliest lambs to the Edinburgh market of any person in that vicinity, at that period; and I have been informed, that he sold these lambs, to the amount of one hundred, at twenty shillings, or one guinea each; and surely a fair price, considering it was some years back. Now, Epicurus talks of this lamb of Mr Brodie's weighing only two pounds and an half, or three pounds per quarter: I cannot contradict this from any personal knowledge of the matter, but cannot help thinking, that neither the butcher who bought these lambs from Mr Brodie, nor the families, to whom they were retailed, would have given the butcher such a price, as to afford him a profit on these small quarters! Besides, we know that this kind of sheep will breed and feed full as heavy a lamb, as the Dorsetshire ewes; therefore I apprehend, that Epicurus must not have been well informed respecting this matter. Why Mr Brodie has dropped the breeding and feeding of fat lambs, and taken to rear the same kind to old sheep, is best known to himself; but no doubt remains with me, that he has done it from motives of prudence; and I trust that he will profit by the alteration.

I cannot pretend to say who first supplied Edinburgh market with real house-lamb; but I can justly say, that the late Mr John Hunter of the Crookses, near Coldstream, more than thirty years ago, sent into Dorsetshire for ewes, from which he bred and fed lambs which he sold to a Deacon *Mellis's* of Edinburgh, a very reputable butcher, (if I am right in the name). Epicurus being, I suppose, well informed respecting house-lamb of eight pounds per quarter being sold for no more than 2s 6d, twenty years ago, I cannot pretend to contradict; but it is very extraordinary, that Mr Hunter did, more than thirty years ago, continue (to my knowledge) to supply Mr Mellis with real Dorsetshire

ſetſhire lambs, for ſeveral years together! Epicurus's compariſon, between the high prices given for bulls and rams, and *tulip roots*, &c. is too bad to be commented upon! I ſhall only obſerve, that it appears, he has thought more about nice *eating*, than the good of his country; but I cannot ſo eaſily paſs him over when he ſays: "Does the Leiceſter ram, or his *grandſon*, get ſtock, producing wool that can be manufactured into broad cloth?" &c. &c. I muſt take the liberty to tell him, that the wool produced by the *new Leiceſters*, makes more money per *head*, or *acre*, or in any point of view, than the fineſt wool grown by any breed of ſheep in this Iſland, becauſe, although the fine wools are ſold much higher by the pound, the other more than makes it up by weight; and ſurely no one can juſtly blame the breeder for purſuing his intereſt, any more than the manufacturer. It has been long obſerved, that the breeder will always produce that kind of wool which will bring the moſt money, even if half hair. For this reaſon the Lincolnſhire breeder produces the coarſeſt and heavieſt fleeces of any other. Indeed the rich marſhes in that fertile country, are highly favourable to the growth of heavy wool. Nay, it is a well atteſted fact, that formerly many of the Lincolnſhire breeders clipped twelve pounds per fleece, over their whole flock! whilſt the average upon the Ryeland ſheep (the fineſt wool in the iſland) is not more than three pounds per fleece, or very little more; the laſt, I am told, is now ſold at about three ſhillings per pound, which is, ſay nine ſhillings per fleece; while the coarſe Lincolnſhire is ſold at one ſhilling, or better, per pound, conſequently makes twelve ſhillings at leaſt, per fleece. Whenever the manufacturer will make it worth the breeder's while to raiſe fine wool, he will ſoon try to do it; but the fact is, that the great advance of late years has been, and is, upon the long wools, grown by theſe very coal-heavers favourite kind, which, although ſo deteſtible to Epicurus, is yet one of the greateſt bleſſings to the labouring part of our Iſland! I need not tell Epicurus now, that the reaſon is owing to there being more wearers of *coarſe* than *fine cloths*, and more eaters of the *coal-heavers* mutton, than the *mountain* mutton, although fed upon *thyme* and *aromatic herbs!* However, I wiſh to carry this no farther, than that the rich certainly have a right to gratify their palates, while ſurely the labouring poor have an equal right to lay out their earnings, on that kind of food which is moſt ſuitable, both to their purſes and palates.

I will, with all my heart, join Epicurus in the praiſes of the native black faced Scotch ſheep, whoſe merits are perhaps not yet ſufficiently appreciated. I have long thought them a moſt valuable breed, and in every reſpect adapted to all the cold expoſed mountainous

mountainous parts of Great Britain. And I cannot help thinking, that a period will arrive, (perhaps not very diſtant) when theſe two breeds, *viz.* the Bakewell or New Leiceſters, and the black-faced, will occupy the greateſt part of the paſturage of theſe iſlands. It is very well known, that the former are now creeping up all the hilly, and even mountainous diſtricts which are not very heathy, whilſt the black-faced are confeſſedly beſt calculated to withſtand the ſeverity of the cold upon the high heathy mountains, where no other ſheep that I am acquainted with can ſubſiſt. —I ſhall ſay nothing about the gods of Iſrael! Gods uſed to drink nectar, we are told, of old.—But in regard to butchers, in Scotland, however they may like or diſlike the improved breed, I cannot pretend to ſay; but in Newcaſtle, Mancheſter, Leeds, Sheffield, Birmingham, &c. &c. &c. I know the butchers can ſell two joints of this breed for one of any other kind whatever. But after all, I ſuppoſe Epicurus (who certainly carries "the pen of a ready writer,") has had no other view by his remarks than to call forth the obſervations of ſome breeders; and although I am convinced of my own inability, I could not avoid ſaying thus much. But I flatter myſelf, that ſome one more competent to the taſk, will anſwer him more to the purpoſe than I can pretend to. In the mean time, I deſire to ſubſcribe myſelf a conſtant reader, and ſincere well-wiſher to your uſeful Publication,

*A Breeder of the Coal-Heavers Mutton.*

*Remarks by the Conductor.*

The above communication is extremely ſatisfactory, becauſe it bears intrinſic evidence of being compoſed by a maſter in the buſineſs of ſheep-breeding. That the new Leiceſter, or improved breed of ſheep, are more profitable to the farmer in general caſes than many other breeds, may almoſt be received as an axiom; though, as we formerly ſtated, ſome of theſe may afford more gratification to the palate. Perhaps this, in a great meaſure, is owing to the different ages at which Highland bred ſheep, and thoſe of the long-wooled ſort are killed; and no doubt, the exerciſe which the former enjoy in ſearching for food, may contribute to produce more highly flavoured and juicy meat. Be that as it may, ſo long as profit is the object either of breeders or feeders, the beſt kind, in their eye, muſt certainly be the one that will return the moſt money for a given quantity of food. When a corn farmer, as is cuſtomary in Scotland, ſows oats upon clover lea, inſtead of wheat, he is not cenſured, becauſe the latter grain will afford the conſumer better bread.

No;

No; he is induced to ſow oats merely becauſe it is found, that, in general huſbandry, they will yield him moſt advantage. The taſte of the conſumer never comes under his notice; and the ſame views aſſuredly govern the breeders and feeders of ſheep.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On the Soiling of Horſes and Cattle.*

SIR,

THE ſoiling of horſes, in the ſummer months, on green clover and rye-graſs, is a practice which prevails in every corn diſtrict where farm labour is regularly executed. The utility of the practice does not need the ſupport of an argument; for, it is not only economical to the farmer, but ſaves much fatigue to the poor animal: beſides, the quantity of dung thereby gathered is conſiderable.

Reflecting upon the advantages of this practice, it has often occurred to me, that cattle, *i. e.* oxen and cows of all ſorts, might be ſupported and fed in like manner during the whole of the graſs ſeaſon. I know very well that milch cows have, in ſeveral inſtances, been ſo kept; but it is not conſiſtent with my knowledge, that the other deſcriptions of cattle have been fed for the butcher according to this mode, though I judge it to be perfectly practicable. No doubt a conſiderable degree of trouble would neceſſarily attend the meaſure, but this is an objection that may be urged againſt every ſcheme for improvement. It was urged againſt ſummer fallow at its introduction, and is ſtill urged in ſeveral diſtricts againſt the drilling of turnips. If, however, the advantages, which would attend a general ſoiling, exceed the trouble occaſioned thereby, I apprehend the meaſure is not to be combated on this ground.

Let any perſon, for a moment, view a field of graſs depaſtured with cattle, eſpecially if the weather is wet, and he will ſoon be convinced of the great loſs ſuſtained from the feet of the animals, and of the waſte which is made in conſequence of their roaming at large. Perhaps it may be eſtimated, that in general caſes, near one half of the graſs is thereby rendered uſeleſs; at leaſt I am certain, from feeding milch-cows in the houſe, that one half of the extent of land will ſuffice for houſe-feeding, that is required when depaſturing is practiſed. Probably another advantage would follow, which I do not remember of having ſeen noticed. The land, from being covered with graſs, would not only produce an increaſed quantity, but alſo be greatly benefited by the excluſion

ſion of air before the graſs was cut or removed. When depaſtured, it is obvious, that none of theſe things can happen. If the graſs was eaten any thing bare in the beginning of the ſeaſon, its future growth muſt be ſtopped by the drought which uſually prevails in the early part of ſummer; and when the ground is not fully covered with plants, the benefit of the grazing ſyſtem, towards the improvement of land, is only partially experienced.

But the chief benefit of ſoiling may be conſidered as ariſing from the immenſe quantity of fine dung which would thereby be accumulated, and which might be returned to the ground in the ſucceeding ſeaſon, after being properly fermented and prepared. In all corn farms, at leaſt thoſe of clay ſoils, it is a work of great difficulty to rot the ſtraw thereon produced, and much of it is miſapplied, in conſequence of ſuch ſoils being naturally unfit for raiſing green winter-crops. A ſenſe of this has induced many farmers to attempt turnips in ſituations not qualified for raiſing them with profit; but even theſe attempts, though in ſome reſpects uſeful, by converting a part of the ſtraw into dung, do not fully anſwer the intended purpoſe. The ſuperfluity which remains after the turnip ſeaſon is over (and this upon corn farms often exceeds a third of the crop) is ſeldom uſed in a beneficial way. If ſtacked in the yard, it is bleached and dried by the ſun and wind, and when uſed in the next ſeaſon, is found to be unfit for the ſupport of animals, and diveſted of the powers which it originally poſſeſſed. If, however, a numerous ſtock of cattle were kept either in the houſe, or in ſeparate diviſions of the fold-yard, all the ſtraw thraſhed in the ſummer months might be immediately converted into dung, the quality of which would be equal, if not ſuperior, to what is made from turnips conſumed at the ſtake.

To carry on this mode of feeding in a regular way, it would be neceſſary to have a conſiderable quantity of tares ſown at different times, ſo as the interval betwixt the firſt and ſecond crop of clover might be filled up. A ſtack of hay would alſo be neceſſary, in the event of bad weather ſetting in, or circumſtances occurring to prevent a regular ſupply of green food.

From conſidering the time taken to cut and bring home graſs for my farm horſes, I am led to think, that one man and a boy, with a ſingle horſe cart, would be able to ſupply thirty head of ordinary ſized cattle with cut graſs, if the crop was middling good, ſay one that would yield two hundred ſtone of hay per acre, and the diſtance of the field from the home ſtead not exceeding half a mile. If the beaſts were tied to a ſtake, it would require an additional hand to litter and clean them; but I am convinced that in ſmall fold yards, well ſupplied with water, and provided with a ſhade to which the animals might retire in a hot ſunny day,

day, this mode of feeding would be moſt eligibly executed. Perhaps the number put into each yard ſhould not exceed ſix or eight, and they ſhould be as equally matched as poſſible.

In this way, the farmer of clay ſoils might be equally benefited by green crops, as thoſe of a light and gravelly nature, where turnips are generally raiſed. The only difference would be, that they would feed at different ſeaſons, or at the time beſt ſuited to the circumſtances in which they are placed. Dung is the mother of good crops; and it appears that no plan can be deviſed by which a large quantity can be ſo eaſily and cheaply gathered, or by which ſtraw can be ſo effectually rotted and rendered beneficial to the owner.

Thus have I communicated the outlines of a plan which, in my humble opinion, might be executed with advantage. The two chief features of it are—An economical uſe of cattle food, and a great accumulation of dung. According to the ſyſtem of depaſturing, both are neceſſarily neglected; the graſs is trampled down and deſtroyed by the feet of the beaſts, while the dung dropped by them is waſted by the ſun and air, waſhed away by rains, and generally laid on a particular part of the field, where they are in the habit of harbouring. I am yours, &c.

A Rural Economist.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Swediſh Turnip.*

Sir,

If the following anecdote, relative to the uſe of this valuable root, is thought worthy of notice in your uſeful repoſitory, you are at liberty to inſert it. I am perfectly ſatisfied of its authenticity.

In winter 1801, you will recollect, the ſtorm of froſt and ſnow ſet in very early, nearly about Martinmas; immediately upon the ſetting in of the ſtorm, a flock of upwards of a dozen of Turkies belonging to a private family in Nidſdale, ceaſed to appear about the houſe, as they were wont to do for their food. They were apprehended to have been ſtolen: In a day or two, ſearch was made for them, when they were found very buſy at feed, upon a ſmall field of Swediſh turnip, not far diſtant from the houſe. Truſting that the ſure guidance of inſtinct would not miſlead the Turkies, they were left to their own diſcretion; they continued to feed upon the turnip through the day,

rooſting

rooſting over night upon ſome trees contiguous to the turnip field, and never coming near to the houſe. At the feaſting ſeaſon of the enſuing Chriſtmas and New-Year's day, a number of them were killed for family entertainments and preſents to friends, when they were found full in fleſh and delicate in flavour: in ſhort, in all reſpects in the higheſt condition, although they had taſted nothing but what they had picked for themſelves in the turnip field.

In the company where I obtained this anecdote, from one of the Ladies of the family to whom the Turkies belonged, a Gentleman preſent was very particular in his inquiries as to the flavour of the fowls; he informed us that the reaſon of his being ſo particular was, that long ago he had been invited to a dinner by Sir James Naſmyth of New Poſſo, where a Turkey was to be ſerved up which had been fed ſolely upon the common field turnip, but that the turnip flavour of the Turkey when brought to table proved ſo overcomingly ſtrong, that it was inſtantly diſmiſſed without being diſſected. I am,

Your Conſtant reader,

C. F.

*Tweeddale, Jan.* 12, 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the expence attending the making of Thorn hedges, and training them up.*

Sir,

The expence of fencing land is imperfectly underſtood by many people; this induces me to trouble you with ſome eſtimates of the charge of incloſing with hedge and ditch, on farms remaining in an open ſtate, which I hope, may afford ſatisfactory information to your readers.

Suppoſe a Landlord lets a farm for 19 years, and binds the Tenant to incloſe ſaid farm, with ditch and thorn hedge; the Landlord binds himſelf to pay the Tenant the value of training up thoſe hedges, that are a good fence at the end of the tack—and to make good the agreement, the Tenant ſets to work, and incloſes the whole farm the firſt year.

What may thoſe hedges coſt the Tenant, to train up, at the end of the tack, per rood of ſix ells?

Ditch

| | | | |
|---|---|---|---|
| Ditch caſting, per rood, - - | £0 | 0 | 10 |
| Thorns per do. - - - | 0 | 0 | 5 |
| Two new paillings, during 8 years, | 0 | 2 | 6 |
| Once ſcouring, - - - | 0 | 0 | 4 |
| Four years cleaning, two times a year, | 0 | 0 | 3 |
| Two years more, ſay, - - | 0 | 0 | 1 |
| Once triming, - - | 0 | 0 | 1 |
| | | £0 | 4 6 |
| Intereſt on 3s. 4d. for 18 years at 2d. a year, - - - | £0 | 3 | 0 |
| Do. or 1s. 2d. for 10 years at $0\frac{1}{4}$ a year, - - - | 0 | 0 | $7\frac{1}{2}$ |
| | | 0 | 3 $7\frac{1}{2}$ |
| | £0 | 8 | $1\frac{1}{2}$ |
| One Rood of hedge, nearly occupies one fall of ground, which, at the rate of 40s. per Scots acre, the Tenant pays 3d. per rood of rent.—19 years at 3d. | 0 | 4 | 9 |
| | £0 | 12 | 10 |

Suppoſe again, that this farm requires 2000 roods of ditches to incloſe it.

| The farm Dr. | | | | Contra Cr. | | | |
|---|---|---|---|---|---|---|---|
| To 2000 Roods, at 12s. $10\frac{1}{2}$d per rood. | £1287 | 10 | 0 | By 2000 Roods of hedges, the rent of the ground paid to the Landlord for 19 years, at 4s. 9d. | £475 | 0 | 0 |
| | | | | This may be ſtated againſt the farm as a benefit from the incloſing. | | | |
| | | | | By balance to be paid by the Landlord | £812 | 10 | 0 |
| | £1287 | 10 | 0 | | £1287 | 10 | 0 |

I am yours, &c. H.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On Moſs as a Manure.*

SIR,

I have peruſed your valuable publication with much ſatisfaction, and am firmly perſuaded its circulation will diffuſe much uſeful knowledge throughout the Agricultural world. You have in ſome late numbers given us a new diſcovery, relative to the value of moſs for compost. I ſay a *new diſcovery*, becauſe I live in a remote corner of the Iſland where we have many thouſand acres of moſs, unapplied to any other purpoſe than that of feul. Adjacent to theſe moſſes, are as many thouſand acres of good light ſoil, very much adapted to turnip huſbandry. I poſſeſs nearly 300 acres of this kind of ſoil, and about 40 acres of Moſs, wherein there is much variety, viz. the ſoft ſpungy moſs of a dirty yellow colour, *provincially* flow-moſs; the brittle brown moſs full of rotten chips; and the black compact moſs of a denſe quality. Now, having equal acceſs to all theſe, I requeſt ſome of your correſpondents, who have actually made a comparative trial, to ſay, which of theſe kinds of moſs are beſt for converting into manure by an admixture of Farm-yard dung, &c. upon Lord Meadowbanks ſyſtem.—Attention to the above ſimple queſtion, will gratify many of your readers, as well as yours, &c.

R. C.

*December* 13. 1802.

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FOR THE FARMER'S MAGAZINE.

## *Queries on Drill Huſbandry, &c.*

WHAT are the advantages, and diſadvantages, of the ſyſtem of drill huſbandry for all crops as practiſed in China univerſally, and now introduced pretty generally into ſeveral parts of England?

What is the beſt form of a farmer's cart?

What are the beſt varieties of ſeeds, as ſuited for particular ſoils?

A. S.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On laying land down with grafs feeds, and obfervations on houfe Lamb.*

SIR,

IT is now well known, that land which has been long in tillage cannot be better improven, or at a cheaper rate, than by laying it into paſture graſs, a few years. This ſyſtem you have earneſtly recommended in the courſe of your publication; for which reaſon, I ſhall only ſay, that you cannot put your readers too often in mind of it, as great numbers ſtill go on in the old beaten track. What I mean by troubling you at this time, is, to ſuggeſt a few hints that may be uſeful to ſuch as are only beginning the grazing buſineſs.

Before graſs ſeeds are ſown, every field ought to be made as clear of root-weeds as poſſible; and ſummer fallow, turnips, or potatoes, are the beſt preparations. If the land is good, after ſummer fallow a very ſlight dunging is ſufficient; a full dreſſing may endanger the graſs, by making the grain crop lodge. It is poſitively neceſſary to have plenty of plants, perhaps 20 lb. of the different kinds of clover, with a buſhel of good clean rye-graſs, may be a proper quantity of ſeeds for an acre. The clovers may be proportioned to ſuit different ſoils. If the grain crop is very thick, early cutting is of great ſervice to the young graſs; very much damage is ſuſtained by ſuch a crop ſtanding a few days longer than is neceſſary. Feeding ſheep on the graſs is better for enriching the land than black cattle; and, perhaps, taking an average of years, fully as profitable.

If the autumn is dry, and a great luxuriance of young graſs appears, it may be eaten a little down before bad weather ſets in; but it muſt not be poached on any account, nor muſt ſheep get on it in winter, though ever ſo dry, for they will deſtroy all the broad clover altogether. It is a very great error to put a full ſtock on graſs during the ſpring months; perhaps a backward ſeaſon ſets in, after ſuch a ſtock has been bought in, and then in place of feeding, they barely ſubſiſt, beſides running the riſk of breaking the fences, to the great trouble and diſappointment of the owner. But when a light ſtock is put to graſs, it is ſure to feed well; and by the month of June the graſs has got ſo far a-head, that it commonly holds out all the ſeaſon, even with a very full ſtock.

Nothing improves graſs land more than *top dreſſing*. If the land has not been limed lately, a good doſe of that very valuable manure will be found highly beneficial, both to the graſs and

after corn crops. If plenty of good earth can be ſpared, from headlands or otherwiſe, to mix with the lime, ſo much the better; but in the laſt caſe, the beſt method is to give it two coats, becauſe when there is an equal quantity of lime and earth, and a ſufficiency laid on to make a proper liming, the graſs is buried and never gets through; but, if one half is laid on, and time given for the graſs to grow through, then the other half may be laid on with ſafety. Hard froſt in winter, or after the land is dry in ſpring, is the proper time for laying on ſaid compoſt. If it cannot be all done in one ſeaſon, the buſineſs may be reſumed the next, or during as many as the land is in graſs. There are ſome other manures that may be uſed for the above purpoſe; the refuſe of ſoap, or what the ſoap-boilers call ſpent aſhes, is a moſt excellent article; lime rubiſh from old buildings, &c. A field that has been managed after the above manner, and has been paſtured with ſheep, three or four years, may be termed in a high ſtate of cultivation, and will amply repay the poſſeſſor for the expence and trouble he has been at.

But it is likely the above mode may be animadverted upon, by your correſpondent, Epicurus, as tending to raiſe rank and unwholeſome graſſes, which may have a bad effect on mutton, to the great loſs of the noble ſcience of good eating. In your laſt number, this Gentleman quotes a paragraph from the newſpapers, which, he ſuppoſes will hurt the feelings of Mr. Brodie, being a man of modeſty and good ſenſe; but he does not ſeem ſo delicate with another *modeſt* and *ſenſible* man, whoſe ſpeculation on *houſe Lamb* did not ſucceed. I cannot be very poſitive as to the date when Mr Brodie began to feed *early Lamb*, (for I ſhall not call it by any other name,) but I think it is not much leſs than twenty years ſince he commenced dealing in that article; and it is well known, that he continued a great many years to ſell one hundred lambs at as many guineas; but is he to blame, becauſe the public preferred *his little* lamb to that which was larger?—A certain author wrote a book, but after much trouble and expence in publiſhing, he could find no body that would buy it; the conſequence was, he loſt his temper and condemned all the world for want of taſte and diſcernment, when he ſaw people buy and read with avidity, publications that he ſaid had no merit. Perhaps the lamb Epicurus mentions was too fat—had too much of the blubber he talks of. I have heard that one of the then Bailies of Edinburgh bought a quarter of it; but, it was ſuch pure fat that it melted quite away, when it ought to have roaſted; and the ſapient Magiſtrate came back on the fleſher and threatened to proſecute him for the loſs of his dinner,

dinner, if he would not refund the half-crown, given for it, which the fleſher was fain to do, and by that means *real houſe lamb* was knockt up in the Edinburgh market forever, for no body dare call it by that name ever ſince. I cannot think Epicurus has been fortunate in his choice of mutton, as we are not to ſuppoſe, a fat weather hog to be very delicate eating. He ſeems to deſpiſe all kinds of wool but ſuch as are fit to be made into broad cloth, though the other articles he mentions, are equally uſeful. I muſt aſk Epicurus, Are there no comforts except being clothed in broad cloth, and having good mutton? and whether he means to ſay, that there is no pleaſure or enjoyment to be found under a *blanket* or a *petticoat*!! Upon the whole, I am at a loſs to know his motive for writing the ſaid letter. When a man has been fortunate, and riſen to opulence, although it ſhould be by the moſt laudable induſtry and good conduct, it ſometimes excites envy in little minds. Perhaps he has gained little by mentioning names. Where we ſee two, we are ready to make compariſons, and when theſe are made, one of the parties generally ſuffers. I am,

Your conſtant reader,

F.

*Eaſt Lothian, 9th March*, 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Information requeſted concerning the diſeaſes of domeſtic animals.*

SIR,

GIVE me leave, through the channel of your Magazine, which I underſtand is extenſively circulated through the Britiſh iſles, to requeſt information concerning the different diſorders of domeſtic animals, particularly, accounts of the accidents to which farm live ſtock is liable, with a deſcription of ſuch as may have happened under the obſervation of your correſpondents. When I mention that this information is meant for the aſſiſtance of a gentleman who intends to bring forward a regular work upon theſe important matters, I truſt that additional reaſons will be altogether unneceſſary.

I may add, however, that the increaſed and increaſing value of live ſtock of all kinds, renders an attention to the ſubjects pointed out of increaſed importance. If more was known reſpecting the anatomy of animals, and if the hiſtory of diſeaſes and the modes of cure uſed in different places were more correctly aſcer-

tained, we might then attain to ſomething like certainty, as to the beſt and moſt effectual way of managing live ſtock, when attacked by internal diſorders, or when they ſuffered under the effects of external injuries. I am yours, &c.

M. S. G.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *On Pit Draining.*

SIR,

IF the following account of the ſucceſsful effects of pit draining be deemed worthy of a place in your intereſting Magazine, it is heartily at your ſervice.

UPON entering to the farm I now poſſeſs, ſome years ago, I found it very much injured by ſpouts and ſprings; ſo that, as a ſolid foundation for every future improvement, an extenſive drainage was indiſpenſably neceſſary. Accordingly, this laborious operation was commenced the firſt year of entry, and has been continued ever ſince, more or leſs extenſively, as I found it could be conveniently carried on. In general, the uſual mode of draining was attended with ſucceſs; but ſome particular patches of ſwampy land, which had been left by my predeceſſor in their natural wildneſs, even in the heart of a field, I found perfectly incurable by all my efforts in the ordinary way: for except upon the top of the drain itſelf, the adjacent ſoil ſtill continued as unfit for cultivation as ever. Suſpecting, that though the drains were fully three feet in depth, my want of ſucceſs was owing to not having penetrated to the ſource of the evil; I cauſed the perſon employed in draining to ſink down a pit to the depth of, at leaſt, five feet from the ſurface; but ſtill without the deſired effect. At laſt, almoſt in deſpair of attaining the end I had in view, I left him to his own exertions, and returning ſome time after, in the courſe of the day, had the ſatisfaction to find his perſeverance in digging about a foot and a half deeper, attended with the moſt complete ſucceſs: for he had now penetrated the ſtratum of gravel lying beneath an exceedingly tough and ſtrong clay, from whence the water flowed copiouſly, ſoon filled the pit, and run along the drain. Highly pleaſed with the ſucceſs of the firſt eſſay of the kind I had ever made, I proceeded to dig ſeveral pits, where I thought needful, to a ſimilar depth, and with the ſame favourable iſſue. But a diſagreeable

circumſtance

circumſtance took place, which, in the ardour of ſucceſsful enterprize, I had not taken care to prevent. The ſides of the pits, from the great weight of clay preſſing upon them at the top, ſuddenly gave way, and precipitated the incumbent maſs into the place from whence it had, with much labour, been thrown. I thereby learned the neceſſity of having a ſupply of ſtones ready at hand, to fill up the pits immediately, to prevent the recurrence of ſuch a diſagreeable circumſtance. In this manner I went on, pitting in ſuch intervals of the drains as I thought neceſſary, until the whole was rendered dry and firm as any other part of the field. Perhaps it may be aſked, would not Elkinton's mode of boring have greatly facilitated the buſineſs, and entirely ſuperceded the tedious and expenſive proceſs of pitting? I can only anſwer, that as I had no boring irons, I could not make the experiment. But there is one advantage, which, in my opinion, pitting poſſeſſes over boring, and that is with reſpect to durability. Where the water that iſſues from the aperture made by the borer, continues to flow without intermiſſion, boring, in that caſe, may be preferable, becauſe a leſs expenſive operation; but in ſuch ſoils, as I have had occaſion to practiſe draining in, the ſprings in ſome ſeaſons totally fail, ſo that the ſmall opening made by the borer is liable to be obſtructed by moles, toads, &c.; whereas pitting, if executed in a ſubſtantial manner, will, I have no heſitation in aſſerting, continue in its original perfection for ages. I have now for ſeveral years continued pitting wherever I have failed tapping the ſprings in the ordinary way of draining, and have the ſatisfaction to add, almoſt invariably with ſucceſs. Before I conclude, allow me to ſuggeſt ſome hints that may be of uſe to thoſe, who, having ſmall experience in draining, are deſirous to practiſe it in ſuch a manner as to render it of laſting utility. Expedition, in carrying on the various operations of farming, is in none more neceſſary than in draining. If poſſible, every different part of the proceſs ſhould ſucceed another without delay. And no ſooner has the labourer finiſhed the ſhovelling out the bottom of the drain, than the carts ſhould, if practicable from the ſtate of the weather, be ſet to work in carrying forward the ſtones to fill it up to ſuch a height as that the plough may paſs over without touching them. And laſtly, the ſtones ſhould be covered immediately, with a layer of ſtraw, ruſhes, fern, or any thing of the like nature, to prevent the earth, from mixing amongſt them, and thereby obſtructing the free courſe of the water. By neglecting to attend in time to theſe particulars, I have frequently ſeen ſuch conſequences enſue, as almoſt entirely to fruſtate the intended effect. For, after the drain has received from the ſpade that neat

and ſmooth poliſh on its ſides, preſented to the eye when newly finiſhed, it is very apt to be injured by the influences of the weather. Froſt, rain, or ſnow, produce ſuch effects upon it, as ſcarcely to admit of its being ſo completely rectified, but that ſome of the looſened earth will be falling down among the ſtones when put in, and thereby, in ſome degree, defeating the beneficial purpoſe expected. I will not attempt an apology for theſe minute directions: every practical farmer knows the importance of attending to minutiæ, in all the diverſified round of his uſeful employment: And ſhould what I have now written, which with great diffidence is offered to the public, be deemed worthy of inſpection, I ſhall, perhaps, be emboldened to contribute my mite at ſome future period. Wiſhing ſucceſs to your Magazine, I am yours, &c.

RURICOLA.

NOTE.

OUR correſpondent writes like a man of experience and obſervation; therefore his future favours will be highly acceptable. In draining a field ſome years ago, we reſorted to the method adopted by Ruricola, and found that it anſwered the intended purpoſe moſt completely; ſince that time, we have been keen advocates for pit draining, where circumſtances pointed out that it could be executed with propriety.

N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Obſervations on the Conſtruction, Hanging, and Faſtening of Gates, with a Plate.*

SIR,

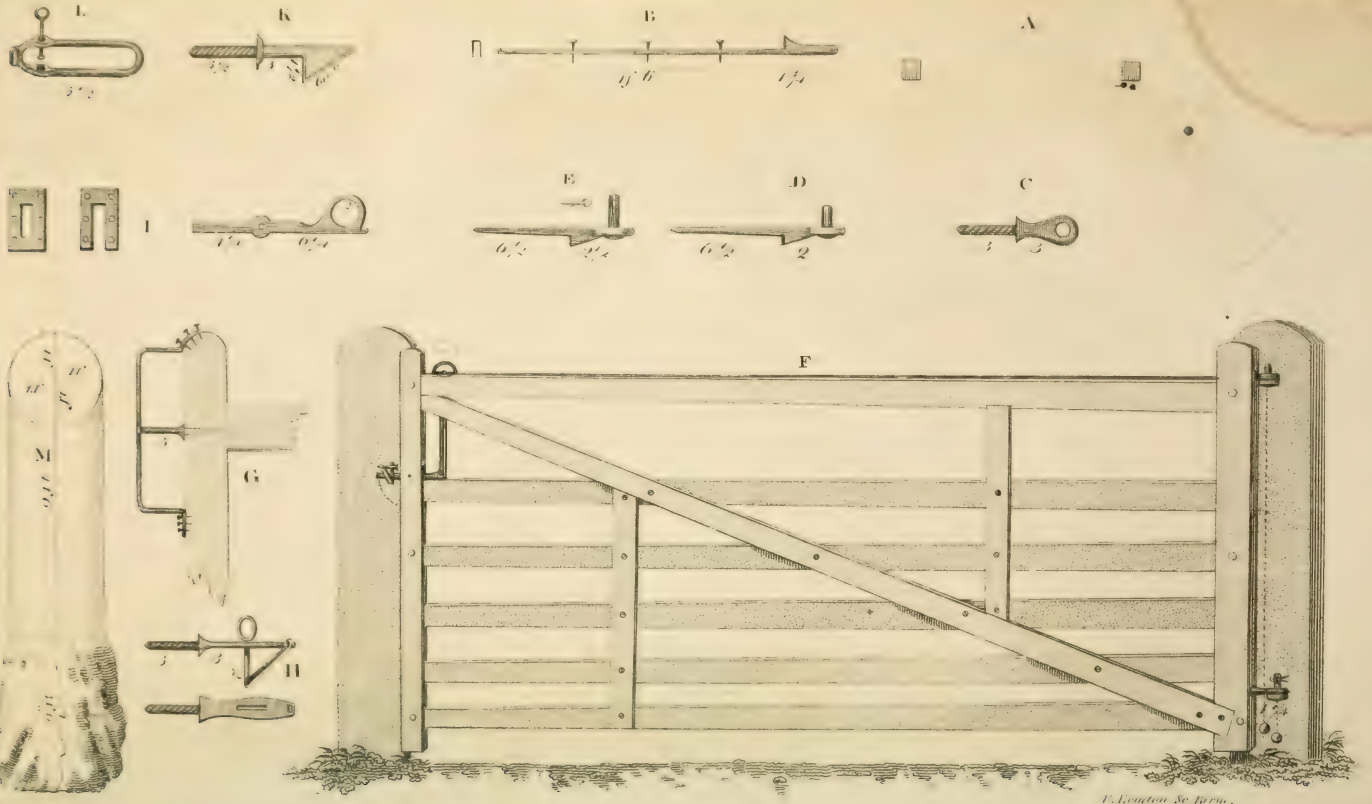
I REQUEST your acceptance of a plate, accompanied with ſome explanations, on the ſubject of Gates, which I have endeavoured to adapt to your Magazine. I am yours, &c.

Hatton Grange,
10th *March*, 1803.

THOMAS N. PARKER.

A repreſents a ſection of two gate-poſts, with the proper poſition for the hinges of a gate to open one way, ſhewing alſo the line of faſtening, the line of reſt, and line of equilibrium; which two laſt lines are in the ſame vertical plane, both with the hooks, and with the centre of the gate's gravitation; and at about 1-16th

part

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part of a circle within the line of equilibrium, a ſhort poſt is placed to prevent the gate opening too near upon its equilibrium, and thereby becoming liable to be left open.

B is the upper thimble for a common gate, which is leſs expenſive, but by no means ſo good as when the ſtrap extends to the whole length of the gate, which will be deſcribed hereafter: this thimble is twiſted 1-4th of an inch bearing towards the hanging poſt.

C is the lower thimble of a gate proportioned to the upper thimble B, as $1\frac{3}{4}$ inch is to 3 inches, in regard to the diſtance between their centres and ſhoulders reſpectively. Theſe thimbles are adapted for a gate whoſe hinges are 40 inches aſunder, and as 40 is to $1\frac{1}{4}$ the difference in this inſtance, ſo ſhould be any other diſtance from hinge to hinge, to the proportionate difference or extra length of the lower thimble; and the greater the extra length might be made, over and above ſuch proportion, the greater muſt become the velocity of the gate's fall, or tendency towards the line of reſt; until its courſe is arreſted by the faſtening poſt 1-16th part of the circle, or 22° 30′ ſhort of the line of reſt. The lower thimble is let into the gate by a ſcrew of equal ſubſtance throughout its length, or not tapered, in order that the adjuſtment of the thimbles as to the velocity of the gate's fall, may be regulated to ſo great a nicety as half a turn of the ſcrew: and the thimble may either be let into the heel of the gate, or lengthened out by a waſher, as occaſion ſhall require. The poſition of the thimbles, in reſpect to each other, muſt be favoured alſo by the lower thimble, which being placed 1-4th of an inch out of the middle of the heel of the gate, in the contrary direction of the upper thimble, the whole difference, as to the diſtances of the two thimbles from the hanging poſt, will be one half of an inch; and their vertical plane, which is the ſame as that of the lines of reſt and equilibrium, will form an angle with the line of faſtening of 22° 30′, or 1-16th part of a circle; this adjuſtment, in effect, adds 1-12th of an inch to the extra length of the lower thimble, ſo that by a plumb line, it will be found (when the gate is hung upright, as it always ought to be) that the actual extra length of the lower thimble, or horizontal diſtance of the two centres from each other, will be $1\frac{1}{4}+\frac{1}{12}$ $=1\frac{1}{3}$ inch.

D Is the upper hook.

E is the lower hook, with key hole and cotter, and is half an inch longer from its centre to the ſhoulder than the upper hook, in order to anſwer the thimbles; the actual poſition of the hooks, with reſpect to each other, or rather the horizontal diſtance of two perpendicular lines, one falling from the centre of each of the hooks, will

will be about 1¼ of an inch only; for if the hooks and thimbles are made to fit properly, each hook will not be more than 1-16th part of an inch ſmaller than its thimble; for as the whole loſs in hanging a gate need not be ſo much as 1-8th of an inch, or not more perhaps than 1-12th (which exactly balances what is gained in the thimbles) the extra length of the lower thimble before it is fixed to the gate, and that of the lower hook before it is driven into the poſt, ought preciſely to accord with the dimenſions expreſſed in the plate, ſuppoſing the diſtance of the two hinges to be 40 inches.

The diameter of the hooks ſhould be about 13-16ths * of an inch, and the perforated parts of the thimbles when made to fit ſuch hooks will be about 14-16ths, that is, 7-8ths of an inch diameter: for pivots of this ſize, the above calculations are ſuited, as to the velocity of a gate's fall; and the thimbles ſhould be made of rounded iron, that the friction may be reduced by the ſmallneſs of the ſurface to be affected thereby †: and when old iron work is made uſe of, wherein a larger ſurface is expoſed to friction, 1-8th, or 1-4th of an inch, as may be ſufficient, added to the common extra length of the lower thimble, will be the readieſt means of counteracting the extra friction ‡.

F is a complete gate for opening one way, and conſtructed in ſuch a manner, that it ſhall not ſink at the head, as ordinary gates are apt to do. The bars are let into the middle parts of the head and heel, and the lacings are tapered for finiſhing upon a level ſurface with the heel, head, and rail; as is evident in the following directions for the ſawing out the timber, which ſhould be of *kind* oak, not too *tough*, and entirely free from ſap.

The waſte in planing and finiſhing a gate may be allowed for or not, as the gate is deſired to be a little more or leſs ſtrong §.

Heel

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* Theſe dimenſions, minute as they may ſeem, will preſent no difficulty, even to an ordinary workman, with the help of a pair of callipers and a common ſcale.

† See Mr Vince's experiments "On the Motion of Bodies affected by Friction." Vol. LXXV. Philoſophical Tranſactions of the Royal Society of London.

‡ If the heel of a gate be not at right angles with the rail, or the perforated parts of the thimbles be greater than the proportion allowed for, the deficiency in either, or both caſes, muſt be ſupplied by adding to the length of the lower thimble.

§ When the timber is good, it is reduced ſo little by being planed and finiſhed into a gate, that no allowance need be made for the waſte; or, at all events, if the ſawer attends to the dimenſions recommended, the gate will be quite ſtrong enough for its ſize.

| | Length. | | Greateſt thickneſs. | Tapered to |
|---|---|---|---|---|
| | Feet. | In. | In. by In. | In. by In. |
| Heel - | 4 | 4 | $4\frac{1}{2}$——$3\frac{1}{2}$ | |
| Head - | 4 | 4 | $2\frac{1}{2}$——$2\frac{1}{2}$ | |
| Rail - | 9 | 0 | $3\frac{1}{2}$——$3\frac{1}{2}$ | $2\frac{1}{2}$——$2\frac{1}{2}$ |
| 5 Bars - | 9 | 0 | $3\frac{1}{2}$——1 | $2\frac{1}{2}$——$\frac{3}{4}$ |
| Diagonal Lacing | 9 | 6 | $3\frac{1}{2}$——$1\frac{1}{2}$ | $2\frac{1}{2}$——1 |
| Larger Upright Lacing. - | 2 | 8 | $3\frac{1}{4}$——$1\frac{1}{4}$ | |
| Smaller ditto | 2 | 8 | 3 ——$1\frac{1}{4}$ | |

which will be found to form a well proportioned gate, the whole of the eight parts at the head preſenting to the eye $2\frac{1}{2}$ inches, and ſeven out of the eight parts at the heel, that is, all excepting the heel itſelf, preſent $3\frac{1}{2}$ inches.

The diagonal lacing is fitted into the heel by a ſtrong butment, even with the loweſt bar, and its ſmaller end meets the upper angle at the head, and is confined laterally by two upright lacings; this would keep up the rail, provided the head were not puſhed forward, and that is prevented by an iron ſtrap of equal length to the gate, being attached to, or forming a part of the upper thimble in the firſt inſtance, where it holds the heel of the gate by the ſhoulder of the thimble; it is afterwards ſcrewed to the rail at proper diſtances; and laſtly, ſecures the whole work together, by a ſcrew nut, rounded and let into the front of the gate's head *. By this arrangement, the gate is in fact ſuſpended by the iron ſtrap and rail, inſtead of the heel, which aſſiſts greatly in preventing any ſtrain upon the mortiſes by the gate's own weight, or otherwiſe: I cannot imagine a gate of a more durable conſtruction, and it ſeems particularly well calculated for *Road gates* †. The faſtening F is remarkably eaſy for a horſeman to open, and as difficult, if not impoſſible, to be opened by cattle: the upright wire of the latch is furniſhed with a guard, and the mortiſe of the head of the gate, through which the latch paſſes, is finiſhed with ſheet

* The iron ſtrap is about an inch by a quarter of an inch in ſubſtance, for one half of its length, when it is tapered towards the head of the gate. At the end neareſt to the thimble, it is made ſtronger for a few inches; and cloſe to the ſhoulder of the thimble, it ſhould be as much as half an inch thick: the edges are chamfered off, and the whole appears to be gradually tapered from the heel to the head of the gate, widening a little round the hole which is left for the upright part of the latch adjoining to the handle.

† In reſpect to a field, through which there is no common road, it is immaterial what ſort of gates may be uſed, ſo that they be made ſecure againſt cattle.

ſheet iron eſcutcheons, like thoſe at I, the faſtening being completed with the catch H, having a button in the place of the ring.

A model of this gate is ſent with the plate, and may be ſeen at the ſhop of Mr Conſtable, Publiſher of the Magazine.

A gate ſuſpended in the manner deſcribed cannot be left open, (excepting in high winds) but will ſhut of itſelf, tho' not with an uniformly accelerated motion, as might be ſuppoſed, its velocity being rather increaſed as it paſſes the middle parts of its ſemicircular courſe, and retarded again as it approaches its line of reſt *.

The effects of wind cannot be counteracted in gates by any good conſtruction of the hinges; for, were a velocity given to a gate's fall equal to the reſiſtance of ſo powerful an agent, the gate would ſoon want repair, from the conſtant violence of its ſhutting, and be ſo much the heavier in the hand of a horſeman: add to which, that when a ſtrong wind blew in the ſame direction as that of the gate's fall, no man on horſeback would be able to withſtand its force; and well conſtructed gates are moſt liable to be acted upon by wind, from their wide extent of ſurface: but if paſſengers are ſo careleſs as to leave gates open under ſuch circumſtances, there will be one ſatisfaction remaining; that is, ſo ſoon as the wind ceaſes, the hinges muſt reſume their property, and the gate faſten itſelf. G is a common peg latch for the head of a gate with a guard to render it ſafer for cattle which might run againſt it when the gate is open; and this forms a very ſecure faſtening, either with or without the guard, when attached to the catch H; but it is thought very inconvenient for horſemen, and particularly ſo for thoſe who are not accuſtomed to it.

H is the catch adapted to the latch G.

I repreſents two ſheet iron eſcutcheons, and a pattern for a ſtrong latch,

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* A gate nine feet long is made to riſe ſix inches at the head, from its line of reſt to that of equilibrium, ſubject to certain variations in the intermediate parts of its motion, viz. as the *co-ſine* of the angle formed by the gate, with its line of reſt, is to the length of the gate, which is made radius, ſo will be the correſponding riſe of the head of the gate to three inches, at any given angle within the quadrant: and the riſe of the head of the gate afterwards will be—as the *co-ſine* of any given angle formed by the gate with its line of equilibrium, in deſcribing the completement of that angle, is to the length of the gate, or radius, ſo will be the correſponding riſe of the head of the gate to the remaining 3 inches; which *co-ſine* of the angle, formed by the gate with the line of equilibrium, is equal to the *ſine* of the complementary angle, or angle of the gate's progreſs from a radius at right angles to, or equidiſtant from the lines of reſt and equilibrium, as the gate approaches the line of equilibrium in performing its ſupplementary courſe. This might be better explained by a diagram, had not the plate been arranged more appropriately to this publication; and thoſe who may be deſirous of purſuing this ſubject further, I muſt refer to a pamphlet which will ſhortly be reprinted by Lackington and Co. London, with five or ſix quarto plates.

latch, which is executed in caſt iron * for trial, 3-4ths of an inch thick.

K is the catch belonging to I, to be made alſo of caſt iron, 1 inch thick.

L is a haſp with a peg, of which the ſtud paſſes through the lower hole, but is too large to paſs the upper hole, and therefore cannot be detached from the haſp: this may be made very uſeful in a fold-yard, &c.

M is part of an oak tree, without the bark; and ſince a well conſtructed gate cannot be advantageouſly uſed, without ſuitable poſts, it is neceſſary to make ſome remarks upon the length, and ſubſtance of ſuch as will anſwer the intended purpoſe; and as much expence and trouble may be ſaved, by a proper underſtanding in this reſpect, I ſhall ſubmit the following calculations.

An oak poſt 10 inches ſquare and 8 feet long is ſufficiently ſtrong for the gate F, and it will contain $5\frac{1}{2}$ feet of timber, or exactly 5 feet $6\frac{9}{10}$ inches, the value of which muſt depend upon the quality of the timber; but for ordinary purpoſes, the lower part of a tree of the dimenſions M will make 4 capital poſts for uſe, though their form may not be thought ornamental, and will contain by cuſtomary meaſure $19\frac{1}{2}$ feet, or exactly 19 feet $6\frac{3}{10}$ inches; but the true meaſure of the part of a tree M is 25 feet, or exactly 25 feet $1\frac{5}{10}$ inch: this leaves to the purchaſer of round timber, taking in the ſap, an advantage in the proportion of about 50 to 39, or upwards of 5 to 4.

*Eſtimate of gate poſts.*

| | | | |
|---|---|---|---|
| For 4 poſts containing $19\frac{1}{2}$ feet cuſtomery meaſure, of moderately good oak (ſeveral inches of which, in the length towards the root, is of little or no value taken together, ſay at 2s a foot. | £ | 1 | 19 0 |
| 32 feet of ſawing, ſay | | | 1 0 |
| | £ | 2 | 0 0 |

This being divided by 4 will amount to 10s a poſt; which value, though apparently large, will be ſoon compenſated in avoiding the continual charge of altering and propping inſufficient poſts: beſides, theſe dimenſions exceed the ſize of 10 inches ſquare, even after

* The perfection to which the art of caſting iron is now brought, leads me to think, that a great part, if not the whole of the iron work for gates, may be executed in that cheap and expeditious manner; and it is my intention to make this the ſubject of future experiments.

after allowing for the early decay of the ſap on the round ſide of each poſt; inſomuch, that a part of a tree of ſmaller dimenſions might ſerve for the purpoſe: ſuppoſe the circumference of a part of a tree, without the bark, intended for 4 poſts, were only 5 feet 8 inches (inſtead of 6 feet $3\frac{4}{10}$ inches, which is the circumference anſwering to the diameter of 2 feet) it would contain 16 feet $9\frac{6}{10}$ inches by cuſtomary meaſure, including the ſap, which would be nearly equal in ſtrength to 4 poſts of 10 inches ſquare; for each of ſuch poſts will meaſure in the true way, more than 5 feet, and the 4 poſts M would be reduced 7s in price, or 1s 9d each, leaving their value about 8s 3d a piece.

It would be frivolous to add illuſtrations upon queſtions, to which ſimilar caſes are detailed in every common book on menſuration of ſolids; but I feel it highly neceſſary, to take notice of the outline of theſe facts, which like other parts of the ſubject, are not generally practiſed upon: and further, ſhould a gate of my recommendation be obſerved to lodge its head upon the ground, I beg to be conſidered, as *accountable only for the gate, and not for the poſt on which it hangs*, unleſs my recommendation in that reſpect alſo, may have been duly attended to.

It muſt be underſtood alſo, that I am eſtimating the value of an oak gate-poſt of a certain ſtrength, and not cavilling about the difference as to the cuſtomary and true meaſure of round timber; for the market price of timber is conſidered as applying to a particular meaſure, and taking into the account the waſte in converting round timber.

I have arranged terms upon which the public may be furniſhed with exact ſpecimens of the gate and iron-work recommended, by application to Mr Samuel Lawrence, Black-Smith, or Mr William Bucknal Joiner, Shifnal, Shropſhire, who will pay immediate attention to letters, poſt paid, containing money to the amount of the order; and any ſurplus of a note will be punctually returned with the goods.

| | | | |
|---|---|---|---|
| A gate to the pattern F with iron-work complete for opening one way, | £ 1 | 15 | 10 |
| Do. do. do. to ſwing, | 1 | 17 | 4 |

I have no heſitation in ſaying, that I believe the above goods cannot be matched for the ſame money *; even when other workmen

* The price of the ſet of hangings and faſtenings for a common field gate, viz. B, C, D, E, G, and H is only 8s, and the whole gate and iron-work complete was calculated,

men have the patterns before them, unless a great many of a sort were made together; and there would still be a falling off in finishing the work which has been effected by practice, and by means of some tools adapted for the purpose.

My object is to spread the improvement in all directions, and the best manner of accomplishing it, appears to be this: for any person who approves of my suggestions, and who wishes to adopt them with the least trouble and expence to himself, to procure one complete gate and iron work to open one way, and from that pattern to set his own workmen to imitate it, which may easily be done, as to all the essential points *.

A gate, with all the iron-work complete, weighs about 6 scores and 10 pounds, and I have so far settled the terms of carriage, that any number of them, either together or singly, shall be delivered at Bridge-north, on the river Severn, 11 miles from Shifnal, for 1s each; or at Gaily Wharf, on the Staffordshire Canal, for the same charge, which may be paid with the amount of any order, if desired. Shifnal is also conveniently situated for land carriage, being on the great road between London and Shrewsbury, and consequently a thoroughfare for the stage waggons.

I shall now close this subject with observing, that it is impossible to allege a stronger proof of the moderate prices at which these goods are furnished, than to express the difficulty which has been experienced in getting the orders executed; insomuch, that a small proportion of them have actually been returned: this, however, is not likely to recur, in regard to such orders as may be received during the summer months, while long days admit of so much more work of this kind to be undertaken, than during the comparatively few hours of *day light* in winter.

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calculated, in the same proportion of profit to the workmen; but it does not answer to furnish the iron-work, unless a complete gate is also ordered, on many accounts; and particularly, as the ignorance or obstinacy of some people, into whose hands they have occasionally fallen, is apt to pervert their use; whereas a complete gate substitutes matter of fact in the place of argument, and by admitting of no misconception, it has never failed to give entire satisfaction, and to do much credit to the workmen who executed it.

* No claim to invention is assumed in this paper: Gates are commonly made of oak, hung on hooks and thimbles, and fastened with latches and catches; but the question is, whether a good method for adjusting these things is generally understood, as it certainly has been but rarely practised.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Correſpondence between Sir John Sinclair Bart. and George Dempſter Eſq.*

SIR,

AT the deſire of my worthy and reſpectable friend, George Dempſter Eſq. I ſend you our correſpondence together, on the enlargement of Farms, with a view of having it inſerted in your valuable Repoſitory. It would give us both much pleaſure to ſee ſo important a queſtion diſcuſſed by ſome of your intelligent correſpondents; as it is impoſſible to throw too much light on ſo intereſting an inquiry, on which the improvement of the country, and the comfort of ſo many of its inhabitants, muſt neceſſarily depend.

I remain, Sir, your very obedient Servant,

*London*, 30th March, 1803. JOHN SINCLAIR.

No. I.

[Letter from George Dempſter Eſq. to Sir John Sinclair.]

My dear Sir John, *Dunnichen Forfar, 3d March*, 1803.

I RETURN you many thanks for tranſmitting me Mr Watt's Letter *. I was ſorry to ſee by it, that he has retired from buſineſs, and laid his fine inventive genius to reſt. I pray your attention to the ſequel of this letter, which is meant by one who loves and reſpects you, to ſave you from a great deal of trouble, much vexation, and heavy expences; and to make your innumerable body of induſtrious and virtuous tenants progreſſively rich and happy. My late worthy kinſman, poor hard-fated Sir George Ramſay of Bamff, uſed to ſay, after becoming farmer, that he found the ſituation of a farmer very enviable; for if a ſick man wanted advice, he muſt fee a doctor; if you be threatened with a law-ſuit, you muſt fee a lawyer; but no ſooner commence farmer than advice from all quarters pours in upon you *gratis*. This letter affords one among many proofs of the truth as well as pleaſantry of this obſervation; I offer you entirely *gratis*, nay, extremely officiouſly, my advice touching the improvement of your valuable and extenſive eſtates in Caithneſs.

In the firſt place, I begin by telling you, I do not approve of your printed plan for improving your eſtates. My principal objection

* The celebrated engineer, Mr Watt of Birmingham: Every friend to ſcience will lament his retirement from buſineſs.

objection, in so far as regards yourself, is the huge expence of the undertaking, to which the fortune of a Duke of Bedford would hardly suffice: and in so far as regards your tenants, the total change you purpose making of them, by converting the little farms they are able to cultivate into large ones, too big by far for their skill or capital. Here I pause to tell you another story. My friend and neighbour, the late Hary Smith of Smithfield, owned a considerable tract of ground, situated in one of the highest and bleakest regions in this country. The contagion of improving this estate seized him. But before undertaking so arduous a task, it was his good fortune to consult his friend, John Rutherford of Kinghorn, one of the most sagacious men of his time. Mr Rutherford paid a visit to the estate. He found it divided into very small farms, and occupied by a vast number of poor little people. He found several of them were weavers and tradesmen, who contrived to maintain themselves, their wives, and swarms of children; and what he admired the most, he found them not only insensible to the bleakness of the climate, and the wetness of the soil, but fondly attached to this most undesirable spot. He wrote to his friend, Mr Smith, in these emphatic words. "I have seen your estate. It is a shocking one. Drop "all your new-fangled projects of improving it. Thank God, it "is inhabited by tenants blind to its faults. Preserve them like "the apple of your eye. They are inestimably valuable. Attach them still more to you and your estate. Give them leases "for their lives. Exempt them from all personal services. Lend "them money at interest to repair their houses, and to purchase "manures. Every one of them will exert themselves to improve "their little spots. When any of them die, their lots will be "eagerly fought after by their children or neighbours. This is "your moment, and not before, to look for a certain increase of "rent. Till then, have patience." This advice was given upwards of 40 years ago. Mr Smith, who then resided in London, embraced and followed it implicitly. The estate was then scrimply 3000 merks Scots a-year, or L. 160 Sterling. It is now in the possession of his nephew, and pays him, I am told, and believe it, at least L. 500 Sterling; and all his little people on it are happy and flourishing.

*De te Fabula Narratur.*

In addition to the above, were you to institute a farming-club at Thurso, preside there yourself; descant on Swedish turnip, sown grass, potatoes, flax, and rotation husbandry; furnish a few seeds; visit the tenants' improvements; distribute a few honorary premiums among the lads and lasses; introduce into Thurso, and its neighbourhood, any coarse kind of manufacture; Osnaburghs, sacking, sail-cloth, cotton, such as rustic hands would

work at in the long dreary winter nights, and ſnowy and rainy days; your eſtates are improved; yourſelf and Lady Sinclair adored; and your fine progeny in proſpect of a vaſt income, acquired with no capital but that of their parents and their own beneficence.

I am,

Sir John,

Your moſt obedient humble Servant,

GEORGE DEMPSTER.

No. II.

LETTER FROM SIR JOHN SINCLAIR TO GEORGE DEMPSTER, ESQ.

MY DEAR SIR,

IT always gives me much pleaſure to hear from you, even when we differ in ſentiments; for I am ſure that any opinion you give, comes with the beſt intentions, and is entitled to great reſpect. But in regard to the particular ſubject of your laſt letter, *namely, converting ſmall farms into large ones*, I am perfectly ſatisfied, from the very extenſive inquiries I have been under the neceſſity of making, that it is the baſis of all ſubſtantial improvement, not only becauſe the land is rendered more productive, but alſo becauſe hands are thereby furniſhed for day-labour, for manufactures, and for commerce. Indeed, it is to the enlargement of farms, and the abundance of hands for labour reſulting therefrom, that I attribute the flouriſhing ſtate of England; nor will Scotland ever be able to reach that proportionate height of proſperity to which it is certainly well entitled, unleſs the ſame plan is purſued. This we have experienced in Caithneſs; for if it had not been for the enlargement of farms in Roſs-ſhire and Inverneſs-ſhire, we could not have carried on our improvements to any extent; becauſe, in conſequence of the ſmallneſs of the farms in our country, it was very difficult to get a ſufficient number of farm-ſervants, and ſtill more ſo of day-labourers, though of the latter deſcription we wanted no leſs than 500 from other diſtricts every year. You may rely upon it, that converting the arable land into large farms, and putting them into a proper ſtate of cultivation, is not attended with the expence you imagine, and there is no riſk of their lying ley; for even in Caithneſs we are getting farmers from the ſouth of Scotland and the north of England to take them. In regard to the ſmall farmers, the commons are appropriated for them, where they get land cheap, which they like better than paying a high rent for good land; or they go to the towns and villages, where they ſoon live more comfortably than ever. In proof of this, only read the ſtatiſtical account of Greenock; where you will ſee how much the country was benefited by the change of reſidence of ſeveral inhabitants of Argyle-ſhire,

who

who were compelled, by the extenſion of ſheep-farming, to ſettle either there or in the neighbourhood.

I can aſſure you, that, ſo far from parting with the people on my eſtate, I am taking meaſures for increaſing their number; and will ſoon have the pleaſure of ſending you the engraving of a plan, containing above 2000 Engliſh acres, part of a common which fell to my ſhare, which is to be divided into about 50 different lots, and where a great number of new ſettlers will be provided for.

I ſee clearly, that both of us are ſo much convinced, the one of the practicability, and the other of the impoſſibility of carrying this meaſure into effect, that nothing but experience will ſatisfy either of us, which is right. I ſhall keep a faithful account of the whole operation. It is the greateſt in point of improvement that has hitherto been attempted. In the ſpace of two or three years at fartheſt, we ſhall be able to judge whether it will anſwer or not. However it turns out, I have many thanks to ſend to you for your friendly hints on all occaſions.

Believe me,
my dear Sir,
moſt ſincerely yours,

*London, 8th March,* 1803. JOHN SINCLAIR.

## No. III.

LETTER FROM GEORGE DEMPSTER, ESQ. TO SIR JOHN SINCLAIR.

*Dunnichen, Forfar, March* 22. 1803.

MY DEAR SIR JOHN,

ISSUE never was better joined by the ableſt ſpecial pleaders of Weſtminſter Hall. It will be *a cauſe celebre.* It would enliven the Farmer's Magazine. What would you think of ſending my ſcrawl, and your very candid and ſenſible reply, to the conductor for that purpoſe, with our names to both. It will at leaſt ſhow the world, that the moſt diametrical oppoſition of ſentiment on one of the moſt important queſtions *in this world,* is not incompatible with friendſhip and affection; and it may, on this account, be of ſome ſervice, by abating the acrimony of political and religious diſputants. For my own ſhare, I have ever thought it is the ſparks from the colliſion of different opinions that has lighted up the blaze of ſcience that illuminates our weſtern, and will, I hope, improve our northern hemiſphere. Your note affords me the firſt hopes that we may enjoy a little longer, and all my time, the bleſſings of the peace our Miniſtry have procured us.

I ſhall be happy to ſee the plan of your Caithneſs common. In return, I may ſend you a new map I am preparing for your

and Lady Sinclair's private uſe, in which I have taken care to lead all the roads from Edinburgh to Caithneſs by the village of Dunnichen, and the habitation of your and her Ladyſhip's faithful humble ſervant,

GEORGE DEMPSTER.

*P.S.* I cannot conclude entirely without adding my thanks for the agricultural reports. They are my maſters, and almoſt my miſtreſſes, for I take them to bed with me!!

## BRANCH II.

### *REVIEW OF AGRICULTURAL PUBLICATIONS.*

*The New* FARMER'S CALENDAR, *or Monthly Remembrancer, for all kinds of Country Buſineſs, comprehending all the Material Improvements in the New Huſbandry, with the Management of live Stock: By a Farmer and Breeder; fourth Edition.* 554 *pages octavo. London,* Symonds.

WHEN the Conſtitutionaliſts of France attempted to improve the government of that country, the principle which guided their proceedings led them to overturn every exiſting inſtitution, however beneficial, and to enact a new ſyſtem of laws, in direct oppoſition to thoſe of the ancient eſtabliſhment. In like manner, the author of the work now before us, who profeſſes to be a farmer and breeder, without ſufficiently inquiring into the utility of exiſting practices, recommends a complete revolution in our agricultural ſyſtem. He is a keen advocate for what is called the new huſbandry, and eagerly ſupports the abſtract principles upon which it is founded. Whether the work may be claſſed as an original performance, or regarded merely as a compilation, we ſhall not ſtop to inquire. Perhaps it is a mixture of both; but as it contains tenets deſtructive to the proſperity of Britiſh huſbandry, we are in duty bound to examine it with ſome attention.

The work is divided into four principal parts. 1ſt, *A preface,* which appears not to have been included in the former editions. 2dly, *The Farmer's Calendar, or Monthly Remembrancer.* 3dly, *Diſſertations on the moſt important branches of the ſcience and practice of agriculture.* 4thly, *On the nature and management of domeſtic animals,* &c. We ſhall analyze each part, according to the above arrangement, and offer a few remarks.

1. The preface, which is of conſiderable length, contains "Reflections on the exiſting ſtate of agriculture, its merits and demerits;

rits; the cauſes and only effectual remedy of ſcarcity." Theſe reflections are of a deſultory nature; and, from the intermixture of various ſubjects, the preface altogether has a moſt hotchpotch appearance. The author thinks that much good has been done to agriculture by the exertions of public bodies, and that the effectual method of extending improved practice, in every county of the iſland, muſt be through the medium of aſſociations. The defects of our preſent practice are then ſtated; and, after cenſuring the corn laws, and contending for the ſuperiority of the row culture over broad-caſt ſowing, he concludes with a ſketch of a tour through Devonſhire and other counties, which is certainly anomalous with the other matters preſented.

2. The calendar, properly ſo called, contains an epitome of rural labour during each month of the year, and is in a great meaſure borrowed from *Mortimer and Young*, who formerly conveyed information in this manner. In looking over the calendar, a ſaying of an old clergyman occurred to our recollection, and, as it is *apropos*, we ſhall adopt it on the preſent occaſion. This worthy father, who was a keen Calviniſt, in the courſe of a diſpute, replied to his antagoniſt, 'You may preach Arminian doctrine, but you muſt pray like a Calviniſt, or you cannot pray at all.' Juſt ſo it has happened with the author of this work. He ſupports the new huſbandry in theory, but, when he reſorts to practice, his inſtructions are borrowed from the old ſchool. In ſupport of our aſſertion, we ſhall quote a paſſage from p. 272. 'Fallowing,' ſays he, 'is the miſerable ſubſtitute of former times, for manure and the hoe culture, and can no longer be neceſſary on *any* ſoil under the preſent improved ſtate of huſbandry.' This is certainly deciſive doctrine, and, if juſt, rendered any directions for working fallows ſuperfluous; yet, without a bluſh, or ſo much as apologizing in the ſlighteſt manner, our author gives excellent advice reſpecting the management of ſummer fallows, from the time of breaking them up, till they are ſeeded with wheat! Various inconſiſtencies of like nature might be pointed out, but the above is ſufficient.

3. Under the third head are compriſed a number of diſſertations on the moſt important branches of agriculture, viz. *Thoughts on hiring and ſtocking farms—on ſoils and manures—on irrigation—on warping—on draining—on the homeſtead or farm-yard—on vermin—on water—on implements of huſbandry.* Here we muſt remark that the author ſeems unacquainted with thraſhing-machines; at leaſt he does not know a good from a bad one. What he ſtates concerning this valuable implement, is borrowed from the Middleſex, Kent, Lancaſter, and Lincoln ſurveys, and can give a ſtranger but a very imperfect idea of the machines now generally uſed. Further, in his account of im-

plements, Mr Ducket's hand-hoe is mentioned, with which a ſervant of Lord Somerville is ſaid to have hoed one fifth of an acre of barley, drilled at nine inches, in 36 minutes. To this we anſwer, *non credimus*. In fact the hoer, if he performed ſo much, travelled nearly at the rate of four miles in the hour, which is not amiſs in a warm ſummer day, without hoeing at all. If our readers will turn up the firſt volume of the Magazine, p. 253, they will obſerve this hoeing feat decribed by our friend, *the Engliſh Touriſt*, though not in ſuch ſanguine terms. The kind of work that would be performed in ſuch a rapid manner, we leave practical farmers to determine.

The remaining diſſertations are *on fences—on woods and plantations—on tillage*, in which ſummer-fallow is condemned to perpetual baniſhment—*on the row culture—on courſe of crops—on blight, mildew, ſmut*, &c.—*on green crops—on miſcellaneous articles*, ſuch as potatoes, carrots, &c.—*on meadow and paſture*.

4. The laſt part is devoted to the management of domeſtic animals, &c. Here we are better pleaſed with what is communicated, than with the other parts of the work; though what is ſtated ſeems to be in a great meaſure abridged from another treatiſe to be afterwards noticed. Unleſs it be on the topic of working oxen (the hobby of every theoriſt), the author talks in a rational manner; but we muſt do him the juſtice to acknowledge, that he admits the neceſſity of giving corn to oxen, which is an idea, long familiar to us. Indeed, thoſe who pretended to work oxen regularly, without a corn feed, did not know what they were about, and impoſed only upon themſelves, while they were attempting to impoſe upon others. A large ox will barely be kept in order, even when idle, if ſupported only upon ſtraw and a *little* hay; but put him to the yoke, and drive him at a pace required to plough an Engliſh acre per day, the poor animal will be knocked up in a month. We feel much inclined to maintain, that a horſe may be ſupported at leſs expence than an ox under ſimilar circumſtances; that is to ſay, if the quantity and quality of work, performed by each, be rendered equal. At leaſt we know, that if a poor horſe, and a poor ox, are put to paſture in the ſame day, that the horſe will take on fat more readily than the ox.

Having thus given an analyſis of the work, and made ſome paſſing remarks, we proceed to examine a few of the author's opinions upon what may juſtly be viewed as the leading points of rural practice. Theſe, confeſſedly are, the moſt effectual way of cleaning the ground, and the mode in which it ſhould afterwards be cropped. In theſe branches of practice the new and old huſbandry differ widely.

We begin with the ſection on tillage, though it is neceſ-

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ſary to refer to the ſucceeding ſection, both being much blended. In this ſection, ſummer fallow is characterized as the bane of good huſbandry, and the continuance of the practice is attributed to an inexhauſtible fund of prejudice in favour of ancient cuſtoms, and not to the rationality of the thing itſelf. It is even maintained that no arguments, but hypothetical ones, can be adduced by fallowiſts. In ſhort, the very common ſenſe of thoſe who make a ſummer fallow, even upon the ſtrongeſt and wetteſt clays, is called in queſtion by this imperative gentleman.

That ſummer fallow is unneceſſary upon *ſome* ſoils, we have never queſtioned; but that it is unneceſſary upon *all*, we believe few people, acquainted with the variable nature of Britiſh ſoils, and the inconſtancy of the climate, will feel diſpoſed to admit. It is well known that three fourths of this iſland conſiſt of ſtrong loam, clay of different varieties, and Mooriſh or peat-earth ſoils, and that upon few of theſe can turnips, or other fallow crops, be cultivated with advantage. In ſuch ſituations, an abſolute neceſſity ariſes for leaving the land uncropped for a ſeaſon, in order that it may be cleaned during the dry ſummer months, when weeds can only be extirpated, otherwiſe ſuch ſoils would gradually be deteriorated, and at laſt prove ſo unproductive as not to be worth the expence of labour. This ceſſation of cropping for a ſeaſon does not by any means leſſen the farmer's profits, or the ſtock of food in the country; on the contrary, it is the ſure way of increaſing both; for, in the ſucceeding years, or during the rotation that follows, the crops that are gained amply repay the temporary deficiency occaſioned by the fallow proceſs. As for the expence incurred, it is only a year's rent which can be ſtated on that head; for the charge of ploughing and harrowing in ſummer, ſeldom exceeds the amount of what is incurred by forcing a crop when the land is in a foul condition, the real value of labour, at each period, being duly eſtimated.

We have often witneſſed attempts made to clean ſuch ſoils as are mentioned above, by introducing drill-crops; but we can ſafely aver, that in every inſtance that came under our obſervation, the attempt turned out unprofitably to the occupier. Turnips, no doubt, will grow upon them, if highly manured; but the conſequences which follow the removal of the crop, upon all cloſe-bottomed ſoils, ought to deter any farmer from ſuch management. It is only where a breeding ſtock is kept, or with a view to rot the fodder of the farm, that turnips ought to be raiſed upon clay ſoils; and, under theſe circumſtances, it may juſtly be ſaid, that conveniency, and not profit, is the object; at leaſt the latter is only a ſecondary conſideration.

We are aware, that the author of the calendar, in ſtrict conſiſtency with the principles he profeſſes, may urge, that land would never be foul, if the drill or row huſbandry was regularly practiſed; but if this was urged, we would reply, that the row huſbandry is impracticable upon the generality of ſoils, and that ſummer fallow is the alone beſt way for pulveriſing and preparing ſuch for corn crops. Notwithſtanding what is maintained in this treatiſe, we are inclined to believe that ſtrong clays cannot be drilled with the leaſt proſpect of advantage, in an average of ſeaſons; nor do we think, faſhionable as the row culture may be, that the mania has ſeized the poſſeſſors or occupiers of obdurate contentious ſoils. We know it is almoſt phyſically impoſſible to form a drill for beans, upon clays, in the month of March, when the ſeaſon is wet, even when the intervals are from 27 to 30 inches; and that to get them rowed, it is neceſſary to put them in after every third plough. If this be the caſe, when the intervals are ſo wide, what would be the conſequence if they were narrowed to 9, 12, or even 18 inches? The ſeed would neceſſarily be put in, after every firſt or ſecond plough, with a ſmall hand drill, and the large complicated drilling machines, ſo ſtrenuouſly recommended, would be totally uſeleſs: but this is not all, ſuch ſoils cannot be horſe-hoed, unleſs the intervals are of the greateſt wideneſs, for they turn up, when ſtirred, in ſuch lumps or clods, as would inevitably deſtroy the greateſt part of the young plants. If the intervals were wide, the produce would, of courſe, be proportionally decreaſed, while the quality of the grain produced would, from a continuance of tillering, be materially injured. With beans this does not happen; for the pods being placed upon the middle and under part of the ſtalk, the introduction of air is abſolutely neceſſary to increaſe their number, and to bring the grain to maturity. Wheat, barley, and oats, are differently circumſtanced. With them the grain is placed upon the top; conſequently the introduction of air is leſs required, and, at all events, we are confident, that with equal management, and upon an equality of ſoils, a greater produce will be gained from culmiferous crops upon *clay ſoils*, according to the old huſbandry, than can poſſibly be gained by the introduction of row culture.

The author of the calendar, however, appears to hold different ſentiments, and ſpeaks of the ſtrongeſt and wetteſt clays being advantageouſly tilled, without the aſſiſtance of ſummer fallowing. To theſe aſſertions we beg leave to demur. If a perſon was deſcribing the climate of Jamaica, and, in his deſcription, ſtated that it was intenſely cold, it might with juſtice be maintained, that he was altogether unacquainted with that iſland. In like manner, any one that recommends drilling ſtrong clay, with *all* grains, may, without breach of charity, be ſuppoſed not poſſeſſed

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of the fulleſt information. We might have gone farther, and not been in an error; we might have ſtated that he was no farmer who gave ſuch an advice, and had not witneſſed the operations he recommended.

Let any perſon reflect, for a moment, on the condition of the greateſt part of land in an average of years, during the months when ſpring ſeeds are ſown. If ſuch have been ploughed in the early part of winter, the bottom, at the time of the ſecond ploughing, is raw and wet, even when the ſurface is dry, and in a workable ſtate. When attempted to be ploughed in the ſpring, the majority of ſoils, at leaſt all thoſe incumbent on a hard or cloſe bottom, turn up tough and waxy; and if a hot ſun prevails for a few days afterwards, the ſurface becomes baked hard like a brick, before the bottom or ſubſoil is free of the ſuperabundant moiſture there accumulated. Under theſe circumſtances, with what propriety can drilling or rowing be attempted, or with what degree of perfection would the ſeveral operations be executed? That the ſouthern diſtricts of England, and even many kindly ſoils in other diſtricts, might ſafely be drilled, we are not at this time intending to deny; but our author makes no diſtinction. He has an uniform *recipe* for every ſoil, and, like the phyſician in the farce, bleeds the weſt ward, and jalaps the eaſt ward, without conſidering whether ſuch preſcriptions are applicable to the patient's ſituation or not.

Our author ſays, p 274, that 'the fallowiſts have contented themſelves with ſimply aſſerting, that their lands will not do without reſt.' This, to be ſure, is a ſtrange reaſon; but, if ſuch has been urged in defence of fallow, we waſh our hands clean of the aſſertion. What is ſummer fallow, but merely tilling the ground at a proper ſeaſon, and freeing it from weeds at a time when the operation of ploughing and harrowing can only be ſucceſsfully employed? If we had no wet weather, and no winter months, then, to be ſure, conſtant cropping would be practicable, and an extra ſtock of men and horſes would only be neceſſary; but in the preſent ſtate of our climate, (and we know not how it may be meliorated) little or nothing can be done from autumn to the firſt of April, except ploughing the ſtubbles, and putting in the wheat, and early ſpring ſeeds. Even with every degree of attention, theſe neceſſary acts are often executed on clay ſoils, under ſuch unfavourable circumſtances, as to haſten a return of ſummer fallow earlier than could be wiſhed.

It carries, no doubt, a flouriſhing ſound, to maintain, that "the earth is deſtined by nature to an everlaſting round of vegetation;" but there is not much ſenſe in the poſition, when applied to practical huſbandry. Will the earth produce corn crops, unleſs the ſeed is ſown, or can corn be ſown, unleſs the earth is cultivated? The natural vegetation of the earth is aſſuredly very

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different from what man wiſhes, and his conſtant object is to deſtroy the natural, and to ſubſtitute artificial vegetation in its place. Take our author's word for it, ſummer fallow encourages this natural vegetation; for he characteriſes regular periodical fallows as nurſeries, and hot-beds for producing couch. Before he has advanced two pages he, however, contradicts himſelf; for, in p. 279, when ſpeaking of intermixing hoed crops of pulſe with broad-caſt crops of corn (which, at the ſame time, muſt be noticed as a departure from his principles), he ſays, 'It will be underſtood that a ſummer's reſpite is neceſſary at firſt, in order to clear the ſoil of root weeds.' What! clear the ſoil of root weeds by a proceſs which encourages their growth? Again, take a paſſage, p. 354, which, though hoſtile to the author's principles, is in uniſon with ours. 'It ought to be an invariable rule to have all the material tillage of heavy land finiſhed by the end of Auguſt, in order to avoid the diſagreeable dilemma of being caught by the autumnal rains, in which it is abſolutely impoſſible either to work clays to advantage, or to lay them properly to endure the winter.' If this paſſage does not fully corroborate the doctrines maintained in this review, we are much miſtaken. What land can be laid up in the end of Auguſt, unleſs it is the portion devoted to ſummer fallow. All the row culture is finiſhed long before that time, and little or none of the land in crop can be ready for the plough. The matter is clear, and needs no elucidation; therefore we ſhall cloſe this branch of the review with a ſolid and judicious remark offered by the reſpectable author of the Stafford ſurvey, which, in every point, coincides with our ſentiments. That gentleman ſays, 'Fallowing for wheat on cold, wet, or ſtrong lands, and on all ſuch as are unfit for turnips, is abſolutely neceſſary; and he who attempts to manage ſuch land, without fallowing, will have occaſion to repent his miſtake. Mixed ſoils, which are too moiſt for turnips, have a particular propenſity to the production of root-graſſes: Summer fallowing, therefore, becomes indiſpenſably neceſſary; and every attempt to crop without it, for any length of time, on ſuch land, has terminated to the injury of the land, and the loſs of the occupier.'

We come now to the next article on row culture, or what is pompouſly called the new huſbandry, though our author afterwards characteriſes it as a primitive practice, derived from the remoteſt antiquity. To this mode of huſbandry we are not hoſtile, under certain circumſtances, that is, where the ſoil and climate are favourable for executing the ſeveral operations. We apprehend, however, that the chief merit of drilling lies in the regularity with which the ſeed may be ſown, and the equal depth in which it may be depoſited. Having made theſe admiſſions, we cannot go farther in ſupport of a ſyſtem utterly impracticable, under

under the phyſical circumſtances in which Britain is placed. Soil and climate, in a few diſtricts, may render it partially eligible, but we repeat that it can never become generally prevalent.

Mr Tull was aſſuredly the father of this huſbandry in Britain; but it is notorious, that neither he nor any one of his imitators ſerved themſelves by acting up to it. Our author improves upon Tull, for he grants that manure is neceſſary to render the ſyſtem perfect; whereas the other thought that tillage was all in all. An ingenious defence of Mr Tull's hypotheſis is, however, attempted, though the reſult is very queſtionable. Our author reaſons in this manner: 'Manure beſtowed upon land ſown broad-caſt, is barely adequate to the ſupport of the weeds ſuffered to grow upon it; therefore, if the weeds are extirpated, manure may be omitted, and the land will ſtill be as rich for carrying corn crops.' Granting the premiſes, we deny the concluſion, unleſs it is previouſly eſtabliſhed that broad-caſt crops are univerſally foul, and drilled ones perpetually clean; none of which neceſſarily follow. In our opinion, broad-caſt crops ſtand a better chance of being clean at autumn, if the ground has been ſuitably prepared, than drilled ones; for, in the firſt caſe, the cloſeneſs of the crop prevents an under vegetation at the end of the ſeaſon; whereas, if drilled crops do not meet and fill up the intervals, a vegetation of weeds enſues at the end of ſummer, after the hoeing ſeaſon is over, in ſpite of every previous effort. That ſuch will be the reſult, every farmer will bear teſtimony; therefore manure becomes as neceſſary in the one ſyſtem as the other. The anecdote of a young farmer, who loſt a Chineſe boar, and found him at laſt in a cover of docks and thiſtles upon his ſummer-fallow, may be true, for all that we know, but, at the ſame time, is altogether irrelevant. He who keeps his fallow in ſuch a miſerable condition at ſeed-time, it may ſafely be preſumed, would not have had his row culture in a leſs ſlovenly ſituation; nay, perhaps, it would have been in a worſe ſtate, ſeeing that ten times more dexterity and attention are required in the laſt, than in the former caſe. Arguing in our author's way, infidels often charge the bad morals of profeſſors to religion itſelf, though it is impoſſible that any ſuch effect ſhould be produced. To practiſe ſummer fallow, is abſtractedly no evidence of bad farming, though it is unqueſtionably true, that many fallowiſts are not good farmers.

We obſerve hypothetical objections to drilling, with replies to each, in imitation of a rejoinder in defence of fallow, made in one of the county ſurveys; but the objections are weak indeed, and do not require a caſuiſt to anſwer them. We have looked into the ſurvey alluded to, and ſee little connexion betwixt the *objections*, and what is there ſtated on the ſubject of drilling. Take

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our author's word for it, the drill-husbandry is spreading most rapidly over the kingdom; whereas we firmly believe, that not one acre of a thousand in cultivation is sown in this manner, nor do we think, as already said, that the practice can ever become general.

We notice several extracts from Mr Amos's ingenious publication on the drill-husbandry; and if that gentleman, or rather Major Cartwright, drilled all his corn crops, and made as much profit from each acre as the result of the experiments ascertains, we frankly declare, that we would not only join in recommending the practice, but even would turn drillers ourselves. In making this declaration, we by no means call in question the correctness of these experiments; though, according to our present ideas, they cannot be received as conclusive evidence. Mr Amos has drilled since 1783, yet it does not appear from his book, that drilling upon all soils is recommended. Now, what does this prove? No more, than that drilling under favourable circumstances, and with great attention, may turn out superior to broad-cast; but, if the system is applicable to every soil and situation, why persevere in broad-cast sowing? Major Cartwright, perhaps, is influenced by sentiments similar to our own, and not an advocate for general drilling; but on these matters we will endeavour to speak with more precision in our next, when Mr Amos's book will come under our examination.

We might have observed that the increased value of farm-labour renders the reduction of field-work a most important object, where it can be safely accomplished. Those who are in the habit of drilling only a fourth of their lands with beans and turnips, know that the necessary expences are considerable, and will be able to estimate the outlay in the event of every acre under cultivation being managed in like manner. To speak of hand-hoeing at one shilling per acre, and hand-weeding the rows at the same rate, must be viewed as mistaken statements. It is seldom that a crop of turnips will pay rent, and the manure and labour applied, but then the profit is expected from the succeeding crops, which are gained at much less expence. Extend the system, and suppose that every crop was guided as a first one, it will be found that a large portion thereof would be swallowed up by the ordinary and extraordinary expences. Besides, in wet seasons, it is highly probable that a small crop would be got upon clay soils. Allowing it practicable to put in the seed, all the remaining operations might be effectually prevented, or at least imperfectly executed.

We shall just notice another section, and finish the article.

Speaking of the effects of blight and smut, the author sapiently remarks, "That to suppose corn caught blight or smuttiness from

from the feed, is perhaps about as rational as to attribute an accidental cold to a defect in the parental feed of the patient; and that to fteep the feed of corn, with a view of preferving the future crop from fmut, is a proceeding equally fage, and entitled to equal fuccefs, as if a man fhould apply to Dr Brodum for a medicine to be taken at gun-powder treafon, in order to cure a cold which may poffibly attack him the Michaelmas next enfuing.' This is perhaps the ftrangeft paragraph that was ever wrote, and is in oppofition to the experience (in many cafes dearly bought) of every farmer in the kingdom, who has been extenfively concerned in the fowing of wheat.

The caufe of fmut (blight is a different diforder, though claffed here with fmut), is one of thefe fecrets of nature which probably will not foon be difcovered; but experience, no matter how it was originally gained, teaches farmers that, notwithftanding the caufe is beyond their reach, the effects may be prevented by applying ftrong fteeps or pickles to the feed immediately before it is fown. If there is one thing, in which we are certain, it is, that applications of this kind, duly adminiftered, will effectually preferve wheat from being fmutted That they will not prevent blight, we grant; but no perfon, to our knowledge, ever entertained fuch an idea, unlefs, like our author, they confounded the two diforders together. Indeed, the whole of this fection makes a *bizarre* figure; for it is firft maintained, that fmutted wheat has no more the power of propagation than ruffted iron; or, in other words, that fmutted wheat will not produce fmutted wheat; and then it is contended, 'that to fow imperfect feed, is a practice nearly allied to madnefs.' Affuredly fmutted feed is imperfect, *ergo*, &c.

In this fection it is alfo faid, that the potatoe curl is nothing but a blight, and that it does not proceed from the feed. Were our author not defirous to contradict eftabliffied opinion, he would not trefpafs fo often againft common fenfe. Let him plant a few drills of found and infected feed alternately, and he will foon be fatisfied, that curl proceeds from the feed, and from no other caufe.

In fome points, the author thinks correctly. He is a friend to leafes, and does not feem inclined to oppreſs the tenantry with arbitrary reftrictions. His fentiments on the corn laws are pretty juft, and fome good obfervations may be found in the fection on manures.

Thus, we have examined a work, which, from the title page, feems to have acquired fome celebrity, and are extremely forry that our general opinion is unfavourable. Publications of this kind may be highly ufeful when guided by a judicious and difcriminating hand; but, otherwife, they are calculated to do much mifchief.

miſchief, eſpecially to unexperienced agriculturiſts. A plain practical treatiſe upon the operative parts of huſbandry, is a deſideratum in agriculture; but ſuch would require to be executed by a man of ſcience and practice; one who was capable of viewing the management of every kind of ſoil with a comprehenſive eye, and who avoided the phantom of theory, unleſs ſanctioned and ſupported by the unerring teſt of ſucceſsful experience.

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*Georgical Eſſays, by A. Hunter, M. D. F. R. S. L. and E. four volumes octavo. Wilſon and Spence, York; Mauman, London; Conſtable, Edinburgh.* 1803.

A COLLECTION, ſuch as the one now before us, may be compared to a muſeum or repoſitory, where various articles are ſtored up for public ſervice. People of different taſtes may find commodities calculated to ſupply their reſpective wants, and where ſuch a variety is preſented, none need go away from the repoſitory unſatisfied or unſupplied.

It muſt be confeſſed, that it is very rare that compilations are generally uſeful; nor need this excite wonder, for it requires a moſt judicious mind to ſelect materials, and to ſeparate the chaff from the ſound grain. Fortunately, upon the preſent occaſion, a gentleman of reſpectable character and diſtinguiſhed abilities has undertaken the labouring oar; and we enter with pleaſure upon an examination of the maſs of information he has preſented.

The moſt of our readers will have heard, that a volume of Georgical Eſſays was publiſhed by Dr Hunter about thirty years ago, being a ſelection from papers given in to the York Agricultural Society. That volume is the baſis of the preſent publication. A conſiderable number of the papers are ſelected from agricultural works ſince publiſhed, and we obſerve that not a few are uſhered into public notice for the firſt time.

It can hardly be expected that all the articles of ſuch a numerous collection are of equal celebrity; but we can with truth declare, that, though of different merits, each is appropriate to the deſign of the work. We have little theory but what the acuteſt practice will ſanction, and when ſpeculation is indulged, it is entered upon with diffidence, and executed without preſumption. A true philoſopher lays it down as a primary rule, that the ſecrets of nature are difficult to explore; hence the wiſeſt men are generally

generally readieſt to confeſs the extent of their native ignorance. As knowledge increaſes, they feel more diſpoſed to admit that the road to perfection is difficult, and that caution is neceſſary in every ſtep.

Without indulging ourſelves, however, in abſtract ſentiments, in favour of the author, and of the work he has accompliſhed, we ſhall endeavour to preſent our readers with an analyſis of the firſt volume, leaving the others as a ſource from which enjoyment may be got, when tired and jaded with the examination of more unſatisfactory writers.

This volume is divided into two books, the firſt containing twenty four, and the ſecond ten eſſays; one of which, viz. the fourth, is devoted to a collection of experiments tranſmitted to the author. We ſhall ſtate the ſubject of each eſſay, and make a few remarks where neceſſary.

An appropriate diſſertation on the riſe and progreſs of agriculture introduces the firſt book; but this contains intrinſic evidence of having been wrote a good many years ago, probably at the time of publiſhing the original work; but as we have not the volume beſide us, we cannot charge our recollection with the circumſtance. Eſſay 1. is *on the nouriſhment of vegetables.* Dr Hunter ſeems to be of opinion, and we think with juſtice, that oil is the chief food of plants, which is contrary to the theory of Tull, who keenly contended that their food was earth. The Doctor ſtrengthens his argument by appealing to the experience of every farmer, whether vegetables, whoſe ſeeds are of an oily nature, are not the greateſt impoveriſhers. Upon this point there can be no doubt. It is exemplified in the caſe of flax, which, if allowed to ripen its ſeed, nearly deſtroys the vegetative power of the ſoil, unleſs ſupplied with an extraordinary quantity of manure. Some judicious obſervations on lime are included in this eſſay. In addition to the univerſal principle, oil, Dr H. thinks that the nitrous acid of the air is of great efficacy; but we do not conſider his reaſoning here as altogether ſatisfactory.

2. *On a rich and cheap compoſt, &c.* In this eſſay, Dr Hunter endeavours to bring his doctrine into action, and propoſes to make a new compoſt with American pot aſh, train oil, and dry mould or ſand; and this compoſt, he thinks, will be equal to rape duſt, ſoot, and other hand-dreſſings. He, however, candidly acknowledges its inferiority to dung; and, in this idea, we decidedly concur.

3. *On vegetation, and the analogy between plants and animals.* This is a very ingenious paper, and probably will be preſented entire on a future occaſion.

4. *On ſteeps.* Steeping of grain is not a modern invention, but has

has been practiſed by huſbandmen ever ſince the Romans poſſeſſed Britain. Dr H. is not an advocate for ſteeps, nor are we, unleſs when adminiſtered as a pickle for the preſervation of wheat from ſmut. If ſteeping is meant to fructify the ſeed, then we are not its defenders; and if we do not miſtake Dr H. this is the ſum and ſubſtance of his opinion.

5. *On the roots of wheat.* Wheat has two ſets of roots, ſeminal and coronal; being ſubjected to the ſeverity of winter, its roots are well diſpoſed to withſtand the inclemency of the ſeaſon. When the froſt comes on early, it is evident that the coronal roots muſt be much injured; and, to obviate this, Dr H. recommends early ſowing, and burying the ſeed deeper. We have found, on the contrary, that the goodneſs of our wheat crops depends more upon the weather in ſummer, than upon previous circumſtances; and have repeatedly experienced, that a wheat crop, ſown under every diſadvantage, and hardly covered by the harrows, has turned out well, when a favourable July enſued; whilſt we have been diſappointed more than once with thoſe crops that looked beſt in the winter months.

6. *On the vegetation and motion of ſap.* This is a ſatisfactory eſſay, and muſt prove highly amuſing to the lovers of natural hiſtory. Animal bodies, from the nature of their ſtructure, are certainly more liable to diſeaſes than vegetables; yet the latter are expoſed to various maladies. In order to aſcertain theſe with any degree of accuracy, a knowledge of the anatomy of plants is abſolutely neceſſary; and this the author has ſufficiently elucidated.

7. *On a new method of cultivating weak arable lands.* The Romans in general fallowed and cropped alternately, and the Tullian ſyſtem was in a great meaſure founded upon the principles recognized by that people. Dr Hunter's method is ſomething ſimilar to that of Mr Tull, only his intervals are more extended. He propoſes to lay out ſuch weak ſoils in ridges nine feet wide, and to crop and fallow the ridges alternately, working the fallow-ridge with a ſmall one-horſe plough. We apprehend, in this way, conſiderable damage might enſue, when the crop was in a ripening ſtate, from high winds which would operate, in ſuch a ſituation, with double force. If our objection is juſt, the utility of the practice is diminiſhed.

8. *On the robinia or falſe acaſia, commonly called the locuſt-tree.*

9. *On a new ſpecies of grain called Siberian or Halyday barley.* This barley is now become unpopular. There are faſhions in grain and ſeeds, as well as in haberdaſhery wares.

10. *On potatoes.* Dr H. thinks the beſt way of planting this root is in hillocks, as the ſun has thereby free acceſs to the crown,

crown, by the falling down of the haulm into the ſurrounding trench. Two men and a boy, he ſays, are capable of planting an acre in four days, and he places the hills in the quincunx form, meaſuring four feet from centre to centre, five cuttings being put into each hill; one in the middle, and the others round it. He thinks the cuſtomary practice of putting the manure above the ſets is injudicious, and aſſigns very plauſible reaſons for the opinion.

11. *On the culture of turnips.* Dr H. conſiders the drill method as moſt correct, but thinks the broad-caſt, or old method, better adapted to the generality of farmers. In our opinion, drilling is attended with leſs trouble than broad-caſt, eſpecially in the article of hoeing. The machines now uſed are ſimple in their operations, and if the practice requires a ſpirited attention, ſo does every branch of huſbandry, if it is meant to be ſucceſsful.

12. *On the culture of carrots.* The author of this paper ſtates his experience in the carrot huſbandry, in a diſtinct manner. In our opinion, this root will never be generally cultivated in Britain, we mean in the fields, nor do we think that it can be advantageouſly uſed in the feeding of animals.

13. *On the ſtudy of nature.* This is a ſhort philoſophical paper, and, from the goodneſs of the ſentiments, merits a ſerious peruſal.

14. *On the time of ſowing.* Here ſome marks are deſcribed which ought to regulate the period of ſeed work; but we ſtrongly ſuſpect, that in this variable climate, the moſt of farmers muſt take opportunity when it can be got, without attending to any other ſign than that the land will ſtand the plough and the harrow. In an average of ſeaſons this is neceſſarily the caſe; and as ſuch a length of time is conſumed betwixt the beginning and ending ſeed-work, an adherence to rules is utterly impracticable.

15. *On a wine, called by the Tartars Koumiſs.*

16. *On the connection betwixt botany and agriculture.* This is a very ingenious paper.

17. *On the nature and properties of marl.* This is a long paper, and divided into nine ſections, each containing a number of experiments. It would require a great deal more room than can be ſpared to give ſuch a view of the ſubject as would be in the leaſt beneficial to our readers. The experiments are diſtinctly detailed.

18. *On agriculture and manufactures.* The firſt object, with every nation, is the improvement of its agriculture; manufactures only deſerve a ſecondary conſideration. Perhaps Britain is in that happy ſtate which permits both objects to be encou-

raged. Dr H. thinks that national bounties or allowances are required to animate huſbandry. We ſuſpect, however, that the beſt thing that Government can do, is to let huſbandry alone, only taking care to remove ſuch obſtructions to its improvement as cannot be removed without legal aſſiſtance.

19. *On gooſe dung.* Virgil ſpeaks of geeſe as troubleſome birds, and very pernicious to corn. The author of this paper thinks otherwiſe, and recommends to farmers to houſe them regularly at night; in which caſe much valuable dung would be gained. We are of Virgil's opinion.

20. *On the advantages of raiſing potatoes on the fallows.* Abſtractly conſidered, it is not beneficial to take potatoes as a crop upon fallows; for, on a real potatoe ſoil, turnips may be more profitably cultivated. In the view of raiſing them in aid of poor people, the queſtion is altered, as ſuch are eminently ſerved by a ſmall piece of potatoe ground which can be cultivated at their leiſure hours. We believe the farm ſervants and cottagers, in North Britain, are uniformly aided in this way; at leaſt it is the general cuſtom of the county wherein we reſide.

21. *On drill ſowing.* Dr H. is not an advocate for drilling corn crops upon the principles commonly urged in its favour; but merely contends for its utility, becauſe the ſeed is thereby put in at an equal and ſufficient depth. He recommends narrow intervals, and of courſe does not ſupport the uſe of the horſe-hoe, which, indeed, is very much in uniſon with the ideas we hold on the ſubject. We concur with the doctor in thinking, that drill ſowing is a practice which will never be brought into general uſe.

22. *On manures and their operation.* This is the production of our countryman, the Reverend Mr Dickſon, and effectually refutes the Tullian doctrine, that earth is the food of plants. Good ſenſe and accurate obſervation are diſcernible in every line of this eſſay.

23. *On oil uſed as a manure.* The reſult of the experiments detailed, goes to prove that refuſe oil may be profitably uſed with earth in the formation of compoſt. We have heard of trials made by others which did not end ſo favourably.

24. *On top dreſſings.* Soot, malt duſt, pigeon dung, and rape duſt, are conſidered as top dreſſings, becauſe they are not worked into the ground by the plough; and the ſoils moſt benefited by ſuch applications are thoſe of a light, ſandy, and limeſtone nature; ſtiff loams and clays requiring lime and dung to break the coheſion of their parts. We entirely agree with Dr H. in the ſentiments expreſſed in this paper

The firſt eſſay of book 2d, is *on the different quantities of rain which*

*which fall at different heights over the ſame ſpot of ground.* This is an ingenious diſſertation, but cannot be ſeparated.

2. *On the culture of potatoes.* The author thinks ſtable dung and moſs are the beſt manures for this eſculent, and details the experiments made by him, to aſcertain the point, in a diſtinct manner. The peruſal of this paper afforded us much ſatisfaction.

3. *On the analogy between plants and animals.* The vegetable world is certainly a very paſſive one, yet, in many inſtances, the laws which govern it muſt be allowed to be analogous to thoſe maintained through the animal world. The brawny oak gradually decays like mortal man. Hoary old age tumbles both into ruins, even though the axe be withheld from the one, and diſeaſe from the other. Vegetables enjoy ſleep as well as the animal world, and the amputation of a plant retards its growth, and ſpoils its ſymmetry, in as great a degree, as if the operation had been performed on an animal ſubject.

4. This eſſay is devoted to experiments and ſhort pieces of practical information tranſmitted to Dr H. As the experiments preſented bear the mark of authenticity and correctneſs, we recommend them to the ſerious conſideration of the public.

5. *On the moſt profitable method of managing light arable lands.* It is the Norfolk ſyſtem of four crops which is here recommended; but we believe many farmers in that county have felt a neceſſity for extending the rotation, in order that a greater variety might be introduced; and we think they have acted rightly.

6. *On the ſexes of plants.* We have received much ſatisfaction from this ingenious eſſay, and lament that it is not in our power at this time to preſent the whole of it to our readers. The true ſource of mildew, may here be diſcovered; at leaſt the theory is ingenious and plauſible.

7. *On a cheap and expeditious method of draining land.* Cheap cures are ſeldom the moſt effectual, and in the draining of land we have uniformly found, that a penny hained was not a penny gained. The value of labour and materials is now ſo much enhanced, that drains, of the ſize mentioned, could not be finiſhed completely at double the expence here ſtated.

8. *On top dreſſings.* This paper is from Mr Young, and contains much calculation and abundance of figures. The beſt conducted experiment may be defeated by a ſhower of rain falling at a time when a critical part of the proceſs is in hand; hence inferences from the reſult ought to be viewed with a ſceptical eye, till confirmed by repeated trials under ſimilar circumſtances.

9. *On the Scotch fir.* The fineſt fir-trees of Scotland are to

be found in the mountainous part of the Highlands, being the natural produce of theſe places; hence the goodneſs of the wood is occaſioned by the ſlow growth which neceſſarily enſued in ſuch barren ſituations. We coincide with the author in thinking, that in a better climate and better ſoil, the quality of the wood would have been leſſened, though its growth would have been proportionably haſtened.

10. *On the phyſiology of plants.* The internal ſtructure of plants is a curious and intereſting ſubject, as, by unfolding their economy, not only botany, but agriculture, might receive great improvement. The author demonſtrates the anatomy of plants with conſiderable perſpicuity, though it is certainly difficult to reaſon with preciſion on a ſubject where analogy muſt often guide us, becauſe poſitive facts are wanting.

We have now got through the firſt volume of this excellent collection, and, in the courſe of our examination, have had little cauſe to cenſure, but much reaſon to praiſe. We may only remark, that had the date of each paper, or the time it originally appeared, been annexed, the work would have appeared in a more perfect ſhape. Within the laſt twenty years, a conſiderable alteration has taken place in the agriculture of Great Britain, and many opinions and practices, originally conſidered to be ſound and orthodox, are now exploded and laid aſide. If the name of the writer had likewiſe followed the title of each paper, the trouble of conſtantly turning up the table of contents would have been avoided. Theſe, however, are venial defects, and may be removed in the ſecond edition of the collection.

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*General View of the Agriculture of the County of Peebles, with various Suggeſtions as to the Means both of the local and general Improvement of Agriculture, by the Reverend Mr Charles Findlater, Miniſter of Newlands, pp.* 413. *Octavo. Edinburgh,* Conſtable; *London,* Longman and Rees. 1802.

Several periodical writers have queſtioned the utility of *the* National Board of Agriculture; but, without giving an opinion on a point which, with ſome degree of juſtice, may be conſidered as problematical, we can ſafely declare, that the gentlemen employed under the authority of the Board, in the great work of ſurveying the kingdom, have in general experienced a poor reward for their ſervices. Every one of them was ſubjected to much perſonal trouble in the firſt inſtance; many not only neglected their own private affairs to forward the views of the Board, but incurred

incurred expences of various kinds, which never were demanded. Others, after volunteering their ſervices, and taking every manner of trouble to aſcertain facts, had their reports publicly diſowned, and, in ſome caſes, reprobated by thoſe who employed them. In ſhort, a degree of confuſion and miſunderſtanding has prevailed, ſeldom exceeded in the management of any other public eſtabliſhment.

The reverend author of the Peebles ſurvey has not, we believe, fared much better than the majority of his brethren; and we underſtand, that, had not ſome friends interpoſed, his labours would have ended in an abortion. Appointed during the adminiſtration of SIR JOHN SINCLAIR (the life and ſoul of the Board), to report the huſbandry of his native county, he cheerfully undertook the taſk, without aſking, or even expecting, any fee or reward; but, after taking much trouble in inveſtigating the ſtate of rural economy, and executing a report which diſplays juſt views of every ſubject embraced, when he appeared at the Board with the reſult of his labours, another Pharaoh ſat there, who knew not Joſeph. In plain terms, the report, for reaſons unneceſſary to be ſpecified, was returned to the author, and is now publiſhed by ſubſcription, like thoſe of many others, who took a ſimilar way of introducing themſelves into public notice. Leaving theſe topics, we enter, with pleaſure, on an examination of the work.

Peebles is a ſmall inland county, containing about 183,000 Scotch acres, and is divided into ſixteen pariſhes, ſome of which are of conſiderable extent, but none of them very populous. The climate is late and moiſt, the loweſt arable land being about 400 feet above ſea level, though cultivation is attempted at an elevation of 900 feet above that level. The weather in winter is rigorous, and in the ſpring months cold eaſterly winds often prevail. The predominant ſoil is moſs or peat earth, mixed in the vallies with portions of clay and ſand. A few old croft lands may be claſſed among loams, and the banks of the waters and rivulets generally preſent a rich ſandy ſoil, probably depoſited there after former floods or ſpeats; but the extent of theſe haughs or low grounds is not conſiderable.

From theſe things it may readily be ſuppoſed, that the diſtrict is better calculated for paſturage than aration; and, in fact, the latter mode of huſbandry is only carried on partially, though, in ſeveral reſpects, in a very ſpirited manner, both by landed proprietors and tenants. Under ſuch circumſtances, the author has judiciouſly narrowed his inquiries concerning the minutiæ of agriculture, and devoted his main attention to the moral excitements of agricultural induſtry, which are of univerſal application. He has not, however, neglected to give a diſtinct account of the

ſyſtem of farming adopted in the county. And the ſection on ſheep (the chief object of farmers in Peebles-ſhire) gives us more ſatisfactory and explicit information, than has been communicated through the medium of cotemporary writers.

In the introduction Mr Findlater ſtates, that agriculture can hardly be conſidered as a ſcience, becauſe it is not eſtabliſhed upon fixed and determined principles. He ſays, 'In regard to the food of plants, a principle which we ought to be able to ſet out with, as the foundation of the whole practice, had agriculture attained to the rank of a ſcience, no certain concluſion ſeems as yet to have been eſtabliſhed.' Perhaps this is refining too much; for, if agriculture is not to rank as a ſcience till the cauſe of vegetable life is aſcertained, we may ſafely conclude, that the firſt of arts muſt remain in a degraded ſtate. Without inquiring whether fire, or water, or air, or earth, conſtitute the food and nouriſhment of vegetables, or of noticing the numberleſs theories that have been preſented to public notice on that abſtruſe ſubject, we may remark, that the dulleſt farmer knows, that if he cleans and dungs his land ſufficiently, it will yield him a plentiful crop, provided phyſical obſtructions do not intervene. Allowing that we were able to aſcertain which of the above elements conſtituted the food of plants, yet, as we have not the command either of fire, air, or water, and cannot order the ſun to diſplay his beams, the air to blow genial gales, or the clouds to drop refreſhing ſhowers, it ſeems that little benefit would be gained, were the curtain of nature drawn up, and our eyes allowed to rove at large in what has hitherto been conſidered as a ſacred field. We have fruitful ſeaſons, and know not the cauſe; and the moſt acute philoſopher cannot account for the germination of a ſingle grain, no more than he can explain the myſterious manner in which he enjoys rational exiſtence.

Under the force of theſe impreſſions, we are led to think that inquiries concerning the agents of vegetation, will not lead to uſeful improvements, though they may gratify the minds of ſuch as are bent upon ingenious diſquiſition. It is certain they cannot benefit the operative farmer, though they may lead him aſtray from the path of action ſanctioned by experience, as has been exemplified in the conduct of Mr Tull and others. We are diſpoſed to think, that a degree of certainty is already attained in every point connected with rational improvement. If the earth is enriched with generous manures, or ſtimulated by powerful cordials, as circumſtances may require; if ſuperfluous water is removed; if noxious weeds are deſtroyed, and ſhelter afforded in naked counties by incloſures; then all that man is capable of executing is performed. In the knowledge of theſe things, the art, if not the ſcience, of agriculture may be ſaid to conſiſt; and

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the unenlightened farmer, who acts according to these principles, knows more of real agriculture than the most scientific philosopher.

Mr Findlater adds, 'But though the theory of agriculture is so very little advanced, many parts of established practice seem abundantly justified by their general success.' Here we think he speaks more to the purpose; for unless we assume that knowledge is gained by intuition, it must be gathered from observation and experience. The general summary of the practical principles of agriculture which follows, is given with precision, and conveys a high idea of the author's discernment.

But it would occupy the whole of this number, were we to present a complete analysis of this interesting work. We shall therefore content ourselves with a rapid view of its most prominent parts, and conclude with a few remarks.

The author has proceeded upon this plain and obvious maxim, 'That the best mode of ensuring the invention and prosecution of the most advantageous measures, is an arrangement which shall communicate to those on whom their execution is devolved a sufficient personal interest in the invention and execution.' To this maxim, except in one solitary instance, he has uniformly adhered. He is likewise hostile to restrictions in every shape, and even to legislative interference; thinking, with truth, that private interest is the most powerful motive to individual exertion.

'*Left to themselves all find their level price,*
*Potatoes, verses, turnips, Greek, and rice.*'

These lines, taken from the *Pursuits of Literature*, stand as a motto in the title-page, and furnish a fair sample of the sentiments which run through the whole work.

We observe that Mr F. is a keen friend to leases, and, from the instances quoted by him, we are disposed to think, that manifold advantages would accompany an extension of that tenure. On the Nidpath estate, where leases of 57 years duration had been granted, it appears that more meliorations have taken place, than upon estates possessed upon a shorter tenure; and that this, under a parity of circumstances, must universally take place, we should consider as an axiom. If permanent and substantial improvements are necessary, it is morally impossible that they will be executed when the possession is held for a short period; and unless such are performed by the landlord, they must remain unexecuted. In arable farms, where the great and leading improvements already exist, we will not say that long leases are absolutely necessary; but, in every county where agriculture is

in its infancy, ſhort leaſes operate effectually to keep it in a backward ſtate.

In like manner, the author ſeems adverſe to compulſory reſtrictions upon the farmer in the management of land, and places the conduct of the Edinburgh agents in a ludicrous light. He ſays,

'It is not a little ridiculous to ſee ſuch direction aſſumed by a buſineſs man, of the profeſſion of the law, very commonly a reſident Edinburgh cit; and provided, probably, with one univerſal model, like the bed of Procruſtes, to which all practice muſt, equally everywhere, be adapted: With equal propriety might he, in general, preſume to regulate the practice of manufacture, or of trade, in thoſe profeſſionaliſts who rent the houſes belonging to his employer, or who borrow his money at intereſt.'

Though the common practice juſtifies the obſervation, yet we are free to ſay, from our own experience, that the errors of theſe gentlemen proceed more from inattention, than any fixed deſign of injuring the tenant. They know no better; therefore, unleſs the tenant beſtirs himſelf, or gets the conditions of ſet ſatisfactorily adjuſted before the rent is fixed, the agent muſt of courſe act agreeable to the information he poſſeſſes. The fair way, when written propoſals are requeſted, is to preſent a liſt of terms, or what is commonly called the conditions of ſet, to the intended offerers, leaving them to fill up the ſum of rent themſelves. That this is not agreeable to the common cuſtom, we confeſs, for the rent is uſually agreed upon in the firſt place, and the conditions afterwards; though it is notorious, that, by arbitrary reſtrictions, the value of a farm may for a time be conſiderably leſſened.

In arranging the ſize of farms, the author judiciouſly declares againſt limitations.

'When Laputa projectors come gravely forward, the one with his ſcheme of 100 acre farms, the other with his of 50, and a third with a ſort of agrarian cottage ſyſtem, it is difficult to determine whether our ſpleen or our laughter ought to be moved. So long as they ſhall confine themſelves to the pragmatical pointing out of their proper intereſts to the parties concerned, but who, it ſeems, have not ſenſe to perceive their own advantage, in ſo far they can do no harm, and the parties will judge for themſelves. When, however, they would attempt to enforce their ſpecific *noſtrums* by legiſlative authority, their interference is of a more ſerious nature than mere pragmatical impertinence.

'The Parliament of Great Britain has not been in the habit of carrying meaſures by acclamation: A ſort of prevalent, philoſophic, native phlegm, ſeems unſuſceptible of enthuſiaſtic admiration of the brilliant ſchemes

ſchemes of projectors. The ſilent operation of the writings of the profound and ingenious Doctor Adam Smith, ſeems to have given a check to the intermeddling ſpirit of regulation.'

If improvements can only go forward when the tenant is ſecured by a leaſe, it becomes an important object to inveſtigate the nature and effect of this mode of tenure. Here we muſt remark, that the laws of Scotland do not ſeem to recognize the tenant's right in ſuch an extenſive way as might at firſt ſight be imagined, and the impolicy of our legal ſyſtem, in this reſpect, is ably deſcribed. We forbear, however, to examine the arguments uſed by our author, as we mean to extract them at length upon a future occaſion.

Mr F. thinks, that extending the right of franchiſe to the tenantry of Scotland would not prove beneficial to them, and ſeems to be of opinion, that the Engliſh tenants, who poſſeſs that right, are thereby reduced to the moſt abject ſtate of ſervility. If leaſes were to be withheld, we cheerfully agree that the right of franchiſe would be of no advantage.

Note, (G.) p. 350. contains a moſt ingenious defence of the unproductive claſſes of mankind, viz. the landed and monied intereſts, whoſe exiſtence is declared to be indiſpenſably neceſſary to the formation and exiſtence of the claſs that is poſitively induſtrious. On this ſubject much may be ſaid on both ſides, and the affirmative of our author's propoſition depends greatly upon the manners and life of the unproductive claſſes. They may do much good to be ſure, and may alſo do much harm. They certainly give employment to many people who might otherwiſe ſtarve; but is not this connected with Mandeville's celebrated maxim, *that private vices become public benefits!* Mendicant idlers, who contribute nothing to the uſe or ornament of ſociety, in our author's opinion, are abſolutely good for no valuable purpoſe; and in this ſentiment, we perfectly concur. Such form a part of what is uſually called a miſchievous population, and, unleſs kept from a principle of charity, ought not to be tolerated.

The note upon foreſtalling and engroſſing has already been inſerted in our Magazine, vol. 2. p. 19. and it is with pleaſure we notice, that it contains the moſt ſterling and liberal ſentiments. We hope, however, that it will be long before ſuch an antidote to popular deluſion is again required; though, if neceſſary, the ſtrongeſt reaſons in favour of a free trade in corn, may at any time be gathered from this article.

Upon all the ſubjects mentioned, and indeed over the greateſt part of the work, Mr F. ſpeaks like a man totally free of prejudice, and with the feelings of an acute and enlightened philoſopher. We are not ſure, however, if he is not influenced a little

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by a ſmall ſpark of the *eſprit du corps*, when he diſcuſſes the tithe queſtion; but let him ſpeak for himſelf.

'Conſtitutions, apparently oppreſſive, are often more ſo in appearance than in reality; ſuch, in all probability, is the caſe with the tithes in England. To the Scots landholder, privileged as he is, it may appear hard, that the tithe of the Clergy ſhould riſe upon him, in conſequence of improvements made ſolely at his expence, and to which they have contributed no ſhare. As, however, the clergy will, doubtleſs, in general, find it convenient to live upon good terms with their pariſhioners, it is preſumeable that they will ordinarily conſent to accept of a very eaſy compoſition. The farmer (who, in taking his leaſe, muſt, no doubt, make allowance for the poſſible exaction of the whole tithe) will, therefore, always find himſelf eaſier, under the moderate compoſition of the clergyman, than he could have done under the proprietor, ſuppoſing there was no ſuch thing as tithes; becauſe the latter lies under no reſtraints of this nature, to prevent him from exacting full rent for the whole value of the ſubject. Thus would it ſeem probable, that tithe ſo far operates to the encouragement of the farmer, in preventing him from being diſabled to carry on his improvements by a rent racked to an exorbitant ſtretch: But the improvements which ſuit a farmer, upon any proper length of leaſe, are of equal importance to the increaſe of the productive powers of the ſoil, as thoſe longer-ſighted improvements of more diſtant return that are ſuited to the more permanent intereſt in the ſubject of the perpetual proprietor. Without doubt, the clergyman, as well as the proprietor, expects to reap where he has not ſown; and, upon a renewal of leaſe, will look for a riſe in compoſition, as the other will for a riſe of rent, proportioned to the increaſed value of the ſubject; though improved entirely by the proper outlay of the farmer's capital, and though neither have contributed one farthing to the improvement. If, however, the lands ſhall have, meanwhile, been improved in productive value, it muſt be a matter of ſmall concern to the public, whether he who reaps the immediate benefit ſhall be a fox-hunter or a preacher. Extraordinary things are alone thought worth reporting; and the inſtances of oppreſſion of the farmers by the Clergy, which reach us in Scotland, candour muſt therefore diſpoſe us to conſider as the exceptions from the general rule.'

We would here remind our author of the maxim ſtated in the introduction to the work, and inquire whether the occupier of land has a *ſufficient perſonal intereſt* in the invention and execution of improvements, if a third perſon can legally come and carry off a tenth part of the fruit of his labours. It is no argument to ſay, that if the tithe-holder did not carry off this tenth, the landlord would require ſo much more rent, for the landlord could not, during the currency of a leaſe, demand a halfpenny more rent than was covenanted, or even, if the tenant poſſeſſed without ſecurity of that tenure, he could not demand an extra

rent

rent for the current crop. To make our author's argument complete, it ought to have been firſt maintained, that both the fox-hunter and the preacher regulated their demands in direct proportion to the goodneſs of the crop; and this being done, the inference would have been concluſive. We do not puſh the matter farther, apprehending that an additional argument is altogether unneceſſary.

The ſection on the corn laws is much to our mind. We are, like the author, hoſtile to every compulſory reſtriction on trade, and are clear the nation has not received benefit from the regulating laws paſſed from time to time on this ſubject. Our anceſtors dreaded being ſtarved, if a *free* exportation was permitted, and, in the preſent age, we are apprehenſive of being inundated with foreign grain, if a free importation was to take place. Were exportation allowed at all times, except in thoſe of dearth and famine, and importation permitted under protecting duties, a vaſt burden would be taken off the trading and agricultural intereſt of Britain. We find that clover ſeed, for inſtance, pays the ſame duty, whether the commodity is cheap or dear, and yet a plentiful ſupply is always procured. It does not appear either that the free import of foreign ſeed has diſcouraged the home growth. If the corn trade was in this way regulated, and protecting duties impoſed equal to the difference of the value of labour and money in Britain, when compared with foreign countries, we ſee no harm that could enſue from a free trade at all times. At preſent, the corn trade is an abſolute ſpeculation; but the propoſed alteration would ſerve to put it upon a footing with other commercial undertakings.

The ſyſtem of entails is viewed in a true light, and the act of Parliament, 10th of his preſent Majeſty, paſſed for the expreſs purpoſe of leſſening their inimical effects, is ſaid not to have operated in Peebles-ſhire, and very partially in the reſt of Scotland. This act, like every other half meaſure, has proved unequal to the evils which it was intended to counteract, though, in its original ſhape, it might have produced conſiderable advantage.

Speaking of Nidpath caſtle, and the deſtruction of the woods around it, we find ſome very pertinent obſervations on this ſubject.

'We laugh at the ſuperſtition of the Chineſe, in paying divine honours to the memory of their deceaſed anceſtors; though it is probable, this their worſhip is, like that of other people, ſo managed, as not eſſentially to interfere with their temporal intereſts. But might not a ſtranger to our laws and cuſtoms be tempted to tax us of a more than Chineſe ſuperſtition, in paying to the wills of our anceſtors, where they interfere ſo materially with our temporal intereſts, as to preclude all power of choice on our part, in ſome of the moſt eſſential parts of their

their management, an obedience more devoted and implicit, than what is generally paid even to an acknowledged Divine authority?'

The ſection on ſheep farms contains n excellent account of the efficient Tweedale huſbandry, but cannot with propriety be abridged. We muſt therefore leave it to be taken up at a time when we have more leiſure upon our hands.

Huſbandry implements, of every deſcription, appear to be of the ſame improved kinds as are now generally uſed in Scotland, and this might have been expected in a county where ſo many of the reſident proprietors may be characteriſed as enlightened and accompliſhed farmers. SMALL's plough, with a curved mould board, is moſt commonly uſed; and the Scotch plough, of a light conſtruction, is preferred for lands abounding with ſtones. Cleaning ploughs, of various kinds, are in the hands of every farmer who cultivates green crops. Mr Sanderſon, on his farm near the village of Linton, has alſo invented a draining plough, which, with ſix horſes, clears out a drain of two feet by eighteen inches. Sir George Montgomery has alſo introduced a draining plough, called *the Miner*, intended to follow another plough of the common kind, and to break up the pan or ſubſoil, thereby furniſhing a channel or deſcent for the water through a bottom formerly retentive. Drilling machines for turnips are of courſe frequent. One horſe coup carts are almoſt univerſally in uſe, and fanners for dreſſing corn are to be found on every farm. The number of thraſhing machines, in this ſmall county, is aſtoniſhingly great, no fewer than 42 being wrought, whereof 18 are driven by water. The placing of the beaters or ſcutchers upon the drum in a line croſſing, at a ſmall angle, that of the drum's axis, inſtead of being placed parallel to it, as mentioned in the addenda to the Roxburgh report, we cannot conſider as any improvement. In the firſt place, the force of the beat or ſwitch would be proportionably leſſened, whilſt the ſtraw would neceſſarily be drawn to one end of the drum, and the motion of the machine of courſe be impeded.

We coincide with our author in thinking that the coſt of completely encloſing ſuch a county as Peebles, would much more than exceed the probable advantages. A paſture encloſure to ſerve as an hoſpital, or to confine rams, would, however, be advantageous on every ſheep farm. In ſeveral counties we have noticed uſeleſs outlays of money in this mode of improvement; but the expence is now ſo great, that the evil ſtands a fair chance of correcting itſelf.

Some excellent obſervations are to be found in the two ſections upon farm-houſes and cottages, and the author deſcribes the former and preſent ſtate of ſociety with philoſophic preciſion. He ſays, p. 36.

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'In former times, the Scots tenant poſſeſſed the ſentiments and habits of the ſubject of an Aſiatic deſpot, rather than thoſe of a free man: deſtitute of that manly confidence, inſpired by the conſciouſneſs of ſecurity in the equal protection of law, he relied more upon the reſources of his own dexterity and cunning; and the dread of being plundered made him cautious of diſplaying ſuch wealth as he poſſeſſed, either in improvements upon his farm, or in purchaſing ſuch comforts and accommodations as its profits might afford. From this contracted habit of concealment, and from the ſmall degree of wealth which he had any opportunity of acquiring, the Scots tenant was contented to live in the moſt miſerable hovel; the poverty, too, of his landlord, who could draw little rent from a wretched tenantry, deſtitute of every proper encouragement to induſtry, diſabling him, even had he been willing, to afford much better accommodation. Theſe hovels, ſuch as they were, coſt nothing to the proprietor, but were upheld for ever by the tenant; it being underſtood, at common law, independent of covenant, that the outgoing tenant ſhould leave them always to his ſucceſſor, *in tenantable and habitable condition:* From uſe and practice *tenantable and habitable*, had come to imply merely *wind and water tight;* and the common ſtyle of farm-houſes admitted of little more accommodation than mere ſhelter from the weather.

'In conſequence of the firm eſtabliſhment of monarchy, and the diſſolution of ariſtocracy—of the abolition of heritable juriſdictions, and the ſubſtitution of independent Judges, unconnected with the ſubjects of their own juriſdiction, and having no perſonal intereſt in their own deciſions—the ſecurity of the tenantry, as well as of all the lower orders in ſociety, is confirmed: General induſtry has kept pace with growing ſecurity; and the ſituation of every rank is altered greatly for the better. In conſequence of increaſing ſentiments of liberality among the landed gentry, of ſecurity among the tenantry, and of wealth in both, the ſtyle of farm-houſes through Scotland has been much improved.'

Speaking of cottages, Mr F. judiciouſly remarks, that

'Upon the ſeparation of farmers from their ſtate of townſhips, runrig, and commonty (to which they had been driven, for mutual defence, in times of turbulence), into diſtinct poſſeſſions with ſeparate reſidences, the farmer, who obtained poſſeſſion of the farm upon which the cluſtered dwellings had been erected, might have a ſuperfluity of houſes to diſpoſe of to cottagers; and in a ſtate of ſociety, where the little extenſion of arts and manufactures afforded few outlets to profitable employment, more people might be found who would rent ſuch houſes or cottages, though there was ſmall demand for them as country labourers, from their finding nothing better to do: Such ſituations would be, however, deſerted, when better employment occurred to their occupiers; and I doubt not but ſuch ameliorations may have often ſuggeſted notions of thoſe ideal diſtreſſes ſo graphically depicted, and ſo pathetically deplored, in Goldſmith's fanciful poem of the *Deſerted Village*. The notion of whining over the deſertion and depopulation

population of the country, is now abandoned to idle and ignorant fentimentalifts, who are left to lament, at pleafure, the lofs of thofe enchanting fanciful fcenes of rural content, and cottage innocence and felicity, which no man of fenfe believes ever to have had an exiftence but in the imagination of the poet.'

Again p. 50, he obferves,

'The perfection of improvement would feem to infer the complete feparation of every profeffion: The occupation of every inch of the lands by profeffional farmers; and the cluftering of labourers and artificers into centrical villages, fo completely detached from the occupation of land, as to buy even their milk, as well as every other kind of farm produce, from the farmer by profeffion; perhaps, even the profeffional carter, to be fo infulated within the bufinefs of his profeffion, as to purchafe from the farmer every article of his horfe's provender. Such a completion cannot, however, exift, but in a country rich in produce by nature and cultivation, and poffeffing a very numerous population; but it is the tendency of the efforts of felf-intereft in every individual to produce an approximation towards it, fo far as circumftances will admit. Meantime, it were idle to attempt, by political regulations, prematurely to enforce the adoption of fuch arrangements as will, of their own accord, enfue in the natural courfe of things. It were ftill, however, more abfurd, to counteract, by regulation, thefe natural tendencies towards amelioration, by forcing the land into fmall cottage poffeffions, where there is no demand for fuch minute divifion; either in yielding to the Cockney apprehenfion of that bugbear, the monopoly of farms; or to the enthufiafm of fentimentalifts, wifhing to embody their poetic conceptions, by the *gratuitous* erection of cottages; which muft neceffarily transform their occupants, from independent labourers, paying in work for what they receive in wages, into abject dependent beggars.'

The fentiments expreffed in the fection allotted to a comparative view of horfes and oxen for farm labour, are very fatisfactory to us; and with an extract from it, we fhall end our examination.

'Oxen, once univerfally ufed in all kinds of tilth, are now as univerfally laid afide; a fact clearly deciftve of the inutility of ufing oxen for labour. Could the farmer, by ufing oxen inftead of horfes, fend more produce to market of beef or corns from his farm, would any thing elfe be neceffary to induce him to adopt the change? An intereft may not be purfued when it hath never been clearly feen; but nothing will induce the dereliction of an intereft, already feen and reaped, but the difcovery of a fuperior intereft arifing from a different management.

'The fubftitution of oxen for horfes in labour is, nevertheleis, the theme of popular declamation; and it would not be at all furprifing, if fome of the wife city committees, fitting in profound inveftigation of the caufes of the high prices of provifions, fhould bethink themfelves

ſelves of applying to the Legiſlature to enforce this ſubſtitution by compulſion. We would rather recommend it to them, to get over their prejudice againſt the uſe of horſes fleſh as food: No deſcription of paſturing animals will take on fleſh more ſpeedily than the horſe; and, if his fleſh ſhould become palatable, he would be, in this reſpect alſo, much more economically kept than the ox. We have heard of dogs having been ſerved up at table, in this country, after the manner of Otaheite: It would be much more patriotic to introduce the Tartar faſhion, of eating old horſes well fattened: Indeed after overcoming the repugnance ariſing from the hideous and diſguſting appearance of that undiſtinguiſhingly voracious and ſcrophulous looking animal, the ſow, repugnance to the fleſh of horſes would appear a mere prejudice of education—like the prejudice againſt potatoes entertained, according to Count Rumford, by the Bavarians, which obliged him to introduce them by ſtealth, as an article of food, into the poors-houſe at Munich.'

A correct map of the county is given, which is an appendage that ought always to accompany ſuch publications. The work is dedicated to Sir James Montgomery, Bart. late Lord Chief Baron of the Exchequer, who, in more reſpects than one, might juſtly be conſidered as the father of the county. Indeed Tweedale has long poſſeſſed a race of proprietors attentive to agricultural matters, and zealouſly active to promote the proſperity of its inhabitants.

Two valuable papers are added by way of appendix. 1. An *account of Whim*, the ſeat of Sir James Montgomery, Bart. with ſome obſervations upon the culture of flow moſs, and of ploughable moſs, communicated by him. 2. An *eſſay on the diſeaſes of ſheep*, which appears to be of great merit. We ſhall ſet aſide both as a *corps de réſerve*, that may be brought into the field when circumſtances require ſuch aſſiſtance.

Thus have we offered an imperfect and deſultory review of a performance, which, with ſtrict propriety, may be ranked among the firſt claſs of the county ſurveys. Our opinions, almoſt in every point, are in uniſon with thoſe entertained by the worthy author; and it is with pleaſure we add, that principles, ſuch as guided him, are ſpreading more and more every day. On a former occaſion, vol. 1. p. 284. we noticed 'that it was a circumſtance extremely creditable to the Scottiſh clergy, that ſuch of their number as were appointed, under the authority of the Agricultural Board, to aſſiſt in the great work of ſurveying the kingdom, had performed their reſpective parts aſſigned them with ſingular ingenuity and judgment; while in England, where the profeſſion is ten times more numerous, only one ſolitary individual, to the beſt of our recollection, was ſelected from the clerical order for handling the labouring oar on that important occaſion.' The ideas which we then entertained concerning the talents of the Scottiſh

Scottiſh clergy for executing rural ſurveys, are more confirmed by the peruſal of the one now under conſideration; and we can with truth declare, that the different branches of rural economy and practical huſbandry could not have been deſcribed with greater accuracy; nor could exiſting abuſes, and the beſt way of rectifying them, have been more ably pointed out, than is done by the reverend author of the Peebles ſurvey. In our next, we ſhall take up another ſurvey executed by a gentleman of the ſame order, and truſt we will have no occaſion to change our ſentiments reſpecting the natural fitneſs of the eſtabliſhed clergy, for deſcribing the rural economy of the diſtricts with which they are connected.

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It appears that a ſmall omiſſion had taken place in the above work, and the author, like a man of liberal principles, haſtens to correct it.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

As my agricultural ſurvey of Peebles has chiefly been indebted to your work for any notice which it has attracted from the public, and as it will chiefly be confined within the region of your circulation, I will take it kind, if at any time you ſhould think proper to direct the attention of the public to it, by extracts, or otherwiſe, if you will indulge me in that opportunity of ſupplying an omiſſion, of which I have been unintentionally guilty. It is the omiſſion of the *hot-houſe* at Hartree, belonging to Colonel Dickſon, which I had not recollected when enumerating the hot-houſes of the county. As the great purpoſe of my work was to notice the *profitable* rather than the *ornamental*, it is no wonder that ſome of the latter ſhould eſcape me. The ſpirited practice of many tenants would alſo have well deſerved notice, had a particular enumeration been intended; but I confined myſelf to ſuch practices as were primary in the introduction of the new ſyſtem, or as were more illuſtrative of ſome general principle. I am,

Yours, &c.

CHARLES FINDLATER.

*Newlands, March* 1. 1803.

*Letter*

*Letter addreſſed to the Commiſſioners of Supply and Landholders in the County of Stirling; containing an Hiſtorical Sketch of the Malt Laws; with Obſervations illuſtrative of the inferiority of Scots to Engliſh Malt, and the cauſes which produce that inferiority.* Edinburgh,—*Conſtable.* Stirling,—*W. Anderſon,* and *C. Randal.*

We have received much ſatisfaction from this plain and temperate ſtatement, and truſt that its effects will not be loſt upon the landed intereſt of Scotland, who, we muſt confeſs, have rather looked upon the malt tax of laſt ſeſſion with an eye of indifference. The author, after giving an hiſtorical account of the exciſe upon malt, and of the zealous oppoſition diſplayed by the Scots members when an equal tax was originally propoſed in the Parliament of Great Britain 1713, proceeds to ſtate ſome pertinent obſervations on the proceſs of malting, and the cauſes which render Scots barley inferior in quality to the barley of England. We cannot do better than give this part of the letter in his own words, as it is replete with ſound ſenſe, and ſolid information.

'Malting, you all know, is a proceſs preparatory to brewing or diſtilling. Its objects are, to ameliorate the quality, and increaſe the quantity of that ſaccharine ſubſtance from which, according to the beſt chemiſts, all ſpirits are extracted. Whatever has a tendency to produce theſe effects, either whilſt the plant is in its natural ſtate of vegetation, or after it is ſubjected to the operations of the maltſter, muſt tend to enhance the value of the malt. Sugar is almoſt univerſally produced by vegetables, but it certainly abounds moſt under the influence of a warm climate. Heat and dry weather always give the promiſe of a fruitful cane, whilſt cold and rain render it aqueous and unproductive. The ſame thing happens to the grape. When foſtered by the genial influence of the ſun, and preſerved from an exceſs of moiſture, it yields a rich return of generous wine; whereas, where much expoſed to rainy weather, the produce is weak, and very ſoon becomes ſour and vapid. But what happens to plants which yield ſugar and alcohol in greater abundance, will in a more limited degree apply to thoſe which afford them in ſmaller quantities. The grain of a cold and variable climate muſt therefore produce leſs of the ſaccharine ſubſtance, which is the eſſence of malt, than grain which is raiſed under more favourable circumſtances.

'One of the operations of the vegetative organs of plants, is to diſengage this ſaccharine matter, and render it ſenſible to the taſte. Hence the ſweetneſs of potatoes and other vegetables, when they begin to ſhoot. The moiſture of the earth and gentle heat to which the ſeed is expoſed, very ſoon act upon it, and make it tend to decompoſition. The parts

recede from each other; the conſtituent principles are left to enter into new combinations; and ſuch as had been only incompletely formed by the interpoſition of other particles, are enabled to ſeparate from theſe, and perfect the combination. The whole ſubſtance of the grain is by this means converted into a mealy powder, from which the ſugar is eaſily diſengaged by ſolution in water.

'The proceſs of *malting*, is an artificial vegetation. The barley is ſteeped in the couch, that it may imbibe a ſufficiency of moiſture, and is then laid in a heap on a floor, where the temperature is high enough to encourage vegetation. This proceſs is allowed to proceed till the aquaſpire or young ſhoot is juſt ready to protrude beyond the huſk: whatever exceeds or falls ſhort of this point, (for reaſons to be afterwards explained,) occaſions a loſs of value on the malt. But, beſides the original ſaccharine ſubſtance in the grain, it would appear that additional ſugar is formed in malting. The conſtituent parts of ſugar are, oxigen, hydrogen, and carbon. The two firſt will be ſupplied by the water in the *malt-bath*; the laſt by the coak or cinders, which are uſed as fuel in the kiln. Yet this augmentation in the malting, which is very conſiderable, both in bulk and weight, will depend very much on the quality of the grain. A large full pickle, with a thin huſk, and ſtronger vegetative organs, will decompoſe a greater quantity of water, and form a greater addition to its original ſugar, than one inferior in all theſe qualities: of courſe, if the Scotch barley is inferior to the Engliſh, it will be proportionally leſs augmented by theſe operations.

'It ſeems to be a common opinion, that, becauſe the ſaccharine ſubſtance of barley is not perceptible to the taſte, it is entirely formed by the proceſs of malting; and that the conſtituent parts only are to be found in the grain, which, during the vegetation or malting, are allowed to combine. Were this the caſe, the climate could not ſo much affect us. But the truth lies on the other ſide. There are no ſubſtances more common in nature than oxygen, hydrogen, carbon. Were there no peculiar organization neceſſary for adjuſting the proportions of theſe elements, and aſſiſting their combination, or were we able, on the contrary, to procure ſugar wherever we could bring them together, that article would be abundant in every quarter. But every one knows that this is far from being the caſe. The fact is, that, inſtead of being altogether produced by the malting, the additional ſaccharine ſubſtance thereby obtained, ſcarcely compenſates the loſs of ſpirit evaporated during the drying, and part of the rootlets which are rubbed off in the turning. This is completely proved by the practice of diſtilling from unmalted barley, from which I have been told two more gallons of ſpirits can be extracted per boll, than from the ſame kind of grain thoroughly malted. It appears, therefore, that the chief object of malting is to ameliorate the ſaccharine juices, by freeing them from thoſe oleaginous and foreign ſubſtances which give a diſagreeable flavour to the liquor. And it follows, of courſe, that it is to the grain we are to look for the comparative quantities of ſugar and ſpirit.' p. 15–17.

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The author then ſhews, from meteorological tables, the difference of heat in the two countries, which he calculates to amount to four degrees. We muſt here remark, that the ſame degree of heat in September will not have the ſame influence upon grain as it would have produced at an earlier period, becauſe the days are ſhorter: therefore, as Scotiſh barley is ſeldom harveſted ſooner than the middle of that month, and often a great deal later, it muſt be deteriorated in a greater proportion than what at firſt ſight appears to be the caſe from theſe calculations. Engliſh barley, at leaſt in all the counties ſouth of Trent, (and it is from thoſe counties that importation is made,) is ſafely houſed or ſtacked, before a ſickle is drawn in one fiftieth part of North Britain.

After noticing the humidity of the climate in Scotland, which certainly affects both wheat and barley materially, the author, with propriety, notices another obſtacle of great magnitude. He ſays,

'In the malting, the great *deſideratum* is to malt the grain equally. When the proceſs of vegetation is ſtopt by the heat of the kiln, if a part of each ſeed only has vegetated, the remainder of it is unmalted; and, on the other hand, if the acroſpire has been allowed to ſhoot out beyond the huſk, the ſaccharine matter contained in it is likewiſe loſt. The inequality of grain, which different ſoils and ſituations muſt produce, cannot fail, in ſome caſes, to render this difficulty in malting unſurmountable. In Scotland, the face of the country is beautifully varied. Narrow valleys, with rich but mixed ſoils, are amongſt its characteriſtics. As the neighbouring mountains are compoſed of granite, ſchiſtus, limeſtone, or other rocks, the ſoil will be a mixture of ſand, clay, or calcareous earth; and where different ſtrata of theſe rocks lye near each other, we find, in the vallies below, different ſoils within the compaſs of a few acres. The inequality of the ſurface, too, creates a difference in the expoſure of the field; ſo that a ſmall farm often contains perhaps all the varieties of ſoil, and equal varieties of expoſure. The grain produced on theſe farms muſt be affected by theſe circumſtances; and it is impoſſible for the farmer to ſeparate the barley according to its reſpective qualities. In England, on the other hand, the country is flat, and the ſoil of large diſtricts uniform. If properly laboured, the grain will be of an equal quality. Now, were the barley of the two countries of the ſame value in every other reſpect, the advantage the Engliſh barley enjoys in this particular alone, would enable it to compete in our markets, not only at a high price, but even with the malt-duty in its original proportions.' p. 28, 29.

We perfectly concur with the author in thinking, that Engliſh barley will at any time ſtand its ground in the market under a duty double of what is paid upon the produce of Scotland; and,

even when ſo circumſtanced, may be profitably uſed both by the diſtiller and brewer. Want of room, however, forces us to abſtain from illuſtrating this matter. Indeed, experience may warrant us to receive it as an axiom.

Many people have taken up this buſineſs entirely as a queſtion of revenue. In our opinion, the point of view, in which it deſerves conſideration, is the injury which will be ſuſtained by the agriculture of Scotland; and we would have rejoiced to have ſeen this ably demonſtrated. It is clear that the growth of barley under the influence of an equal tax, muſt be neceſſarily diſcouraged, in every Scotiſh county, in direct proportion to the lateneſs or humidity of its climate, becauſe the increaſed duty will operate preciſely as a bounty upon the importation of Engliſh grain. Even at the old rate of duties, this was partially felt; but as the duties are increaſed, or the price of the perfect article is augmented, the difference in value, betwixt the barleys of both countries, muſt likewiſe be more diſcernible: hence, the inferior or ſecond kinds will either be altogether neglected, or ſold upon terms that will not defray the expence of cultivation. N.

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# PART III.

## Agricultural Intelligence.

We noticed, in our laſt, that meetings of the landed intereſt had been held in ſeveral counties for conſidering the act of laſt Seſſion, impoſing an additional duty on malt, wherein the principle long eſtabliſhed, and till then uniformly adhered to, of taxing barley malted in Scotland at one half of the Engliſh duty, had been completely departed from. At that time, we flattered ourſelves, that a meaſure ſo inimical to the agricultural proſperity of this country would be combated to the uttermoſt, and that every conſtitutional ſtep, ſuch as petitioning Parliament and inſtructing members, would be taken by the landed intereſt, as guardians of the public welfare. It is therefore with concern we obſerve, that only a few counties (Aberdeen and Stirling particularly) have beſtirred themſelves on this occaſion, and that, in many others, the ſubject has not been deemed worthy of the ſlighteſt notice. At ſome meetings the queſtion was diſcuſſed in a mere milk and water way; and the arguments uſed in ſupport of the tax, ſatisfy us that the authors were totally ignorant of its nature and

and conſequences. In fact, the meaſure has been diſcuſſed as a revenue queſtion, though not oppoſed by a ſingle perſon on that ground; and the probable, we might have ſaid the certain effects of the act, have been either blinked or miſunderſtood.

To us, who are little intereſted in the iſſue, but who enjoy many opportunities of aſcertaining the conſequences, it appears, that an equal duty in both countries upon any article whatever, muſt neceſſarily give a decided preference to the one which produces the article in the greateſt perfection. Abſtractedly conſidered, this poſition will be received as an axiom by the greateſt driveller in political œconomy, though recent circumſtances prove that an equal malt duty is not by many people conſidered in that light. This leads us to inveſtigate the buſineſs at greater length than cuſtomary, when any public meaſure connected with agriculture is noticed; and we are influenced to do ſo, by a firm conviction that the tax, if perſiſted in, will prove eminently injurious to Scotiſh agriculture. The tenantry muſt ſuffer in the firſt inſtance, but the proprietors will not afterwards eſcape.

In entering upon this inveſtigation, two points occur to our view, which merit ſeparate diſcuſſion. 1. The *natural* difference in value betwixt the barleys of England and Scotland. 2. The *artificial* difference created by the immenſe duties levied on the article, from the time it is malted to the period when it is manufactured into ale or ſpirits. We apprehend, that the majority of the landed intereſt are not ſufficiently acquainted with the extent of the natural difference; and as for the artificial difference, it does not appear that the matter has occupied their thoughts.

That Engliſh barley is much ſuperior to the produce of Scotland, we believe will not be diſputed. Every perſon who reflects upon the market value of grain, ripened and harveſted in the early part of autumn, under the influence of a hot ſun, will readily acknowledge the inferiority of ſuch as may happen to have been harveſted, even upon the ſame farm, three or four weeks later, when the air was damp, the rays of the ſun leſs intenſe, and adverſe weather had occurred. If this inferiority prevails in grain raiſed on the ſame farm (and from experience we know it does), the like difference muſt aſſuredly follow, in a comparative view of Scotiſh and Engliſh barleys, taking the produce of both countries upon a fair average. In England, where the climate is conſiderably earlier, the greateſt part of barley ſeed is made in February and March; and in all the exporting counties, the young plants fairly cover the ground before much Scotiſh barley is ſown. This gives a ſtart at the outſet, which is afterwards increaſed in every ſtage, and advances the value of the crop ſomething in the way that a ſum of money

money is augmented by adding compound to ſimple intereſt. Beſides, the grain reaches maturity at a period when the full advantages of a hot ſun are gained; and this increaſes the ſaccharine ſubſtance which produces ale and ſpirits. To our farming readers, who, profeſſionally, muſt be acquainted with the immenſe benefits attending an early harveſt, an apology is due, on account of this ſtatement; but ſomething of the kind appeared neceſſary, as the ground-work of our after arguments.

Having thus ſhown that Engliſh barley, from phyſical circumſtances, is ſuperior to Scotiſh barley, we come next to aſcertain the extent of that ſuperiority, or, in other words, to ſtate the natural difference of value betwixt the barley of both countries.

The quantity of proof ſpirits that can be drawn from a Linlithgow boll, of the average of Scotiſh barley, does not exceed eleven gallons, whereas the uſual qualities imported from England (and theſe are below the average of Engliſh produce) will yield thirteen and three fourths gallons, and in ſome caſes above fourteen gallons, making a balance of two gallons and three fourths at leaſt in favour of the latter. This, in fact, conſtitutes the *natural* difference betwixt the barley of both countries; and, if no duties were impoſed upon the manufacture, would be equal to twenty-five *per cent.* or thereby of the original value. This difference is, however, *artificially* increaſed, by the impoſition of heavy duties upon the article in the different ſtages of manufacture; hence the fourth of a gallon of *extra* quantity may become as important an object to the trader, under exiſting circumſtances, as a whole gallon would have been, had theſe circumſtances not exiſted.

In the year 1787, a fair and correct experiment was made betwixt a quantity of Norfolk barley and the like quantity of barley produced in one of the moſt fertile and beſt cultivated Scotiſh counties. The barleys were both malted by the ſame perſon, and that of Scotiſh growth weighed about 3 lib. *per* boll more than the Norfolk, yet the latter yielded two gallons of more ſpirits, which, at preſent value, is equal to all the malt duties put together. The like difference would have happened, had theſe barleys been brewed; nay, more, the quality and flavour of the ale would have differed as much. In brewing and diſtilling, it is the quantity of ſaccharine matter contained in the grain that furniſhes a criterion for aſcertaining its comparative value; but theſe things are now ſo well underſtood, that it aſſuredly would be ſuperfluous to enlarge on them.

We ſhall now proceed to the ſecond point mentioned, viz. the artificial difference betwixt Scotiſh and Engliſh barleys; and here we particularly requeſt the attention of our readers.

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We muſt premiſe, that, ſince 1725, the period when the malt duty of Scotland was reduced below the Engliſh tax, barley was, at different times, imported from England into Scotland, in conſiderable quantities, particularly from 1782 to 1789, even when the duties on diſtillation were trifling, in compariſon with thoſe now exacted. If the quality of the grain imported was ſo ſuperior, as to defray the expences of importation, when the government duties were low, an additional temptation to go to the ſame market for ſupplies muſt be furniſhed, by increaſing the duties in any ſhape. Whether the duty is upon the malt, upon the gallon of ſtill uſed, upon the gallon of waſh, or upon the gallon of ſpirits, that temptation is increaſed, though in different degrees. Every halfpenny of additional duty paid in either way, contributes to render good grain of greater value. The trouble and expence of manufacturing is exactly the ſame; the duties are alſo alike, whether the grain is good or bad; but the produce derived, or the quantity and quality of the perfect article, is widely different.

In this view of the buſineſs, it is evident that inferior grain, manufactured into malt, is unable to yield the ſame revenue to Government as that of ſuperior quality, becauſe it does not yield ſo much ale or ſpirit, out of which the duties muſt be paid. If the ſame revenue is collected, one of two things muſt neceſſarily follow; either the manufacturer muſt work with loſs when he uſes ſuch grain, or he muſt make purchaſes below the natural value of the article; in which caſe, the whole loſs muſt fall upon the cultivator. Since the act of laſt Seſſion, this artificial depreſſion has ſhewn itſelf in a clear manner; for, in many counties, barley cannot be marketed, and, in every diſtrict, ſells nearly in direct proportion to the value of the article when manufactured into ale or ſpirits. We do not mean to ſay, in proportion to its natural value; for this is the exact level it would find, were no duties impoſed; *but in proportion to the balance which remains in the manufacturer's hands, after the expence of workmanſhip and the demands of the revenue are ſatisfied.* The manufacturer is unable to afford a higher price than the amount of this balance; conſequently, every increaſe of duty increaſes the artificial inferiority of Scotiſh barley, and operates as a bounty upon the importation of finer qualities from the eaſtern Engliſh counties.

In the Lowland diſtillery of Scotland, according to the ſyſtem of working adopted, that is to ſay, when only one third of malt, or thereby, is uſed, the whole duties levied upon a gallon of proof ſpirits amounts to three ſhillings and three pence; and, taking this as a *datum*, we may be enabled to ſhow how far the natural inferiority of Scotiſh barley is artificially increaſed

increaſed by a ſyſtem of equal duties; conſequently, that a malt tax, nominally one half, may, in reality, be as heavy upon the growers of barley in Scotland, as the whole Engliſh duty is felt in that country. The matter ſeems plain enough; and we only wiſh to make ourſelves underſtood by thoſe who have not devoted their attention to ſuch inquiries.

We have already ſtated, that the average difference of produce from the barleys of England and Scotland, amounts to two gallons and three fourths, (in the manufacture of ale the difference is equally great); and, if we eſtimate the value of the extra gallons at thirteen ſhillings and nine pence, or five ſhillings each, and ſubſtract the ſtill, waſh, and ſpirit duties thereupon, which may amount to ſeven ſhillings and nine pence, then it will appear, that the barley of the firſt mentioned country is worth ſix ſhillings per boll more than the average qualities of the latter. As the duties are increaſed or diminiſhed, the difference in the value of the raw article (barley) muſt likewiſe increaſe, or diminiſh, though not in an arithmetical, but in a geometrical proportion. This is occaſioned by the value of the perfect articles (ale and ſpirits) being out of all bounds above the worth of the raw article from whence they are manufactured.

The value of ſpirits which may be extracted from a boll of average Scotch barley, when the price is five ſhillings *per* gallon, amounts to two pounds fifteen ſhillings; but the value of what may be drawn from a boll of Norfolk barley is three pounds eight ſhillings and ninepence, making a difference of thirteen ſhillings and ninepence on each boll after being manufactured. Now, upon the ſuppoſition that the former is worth fourteen, and the latter twenty ſhillings, the *natural* difference of ſix ſhillings is *artificially* increaſed to thirteen ſhillings and ninepence in the courſe of the manufacture. This is entirely occaſioned by the reſpective qualities of the raw materials being eſſentially different, and renders the one unable to bear the ſame degree of taxation as the other. It deſerves alſo notice, that this increaſed value of produce is obtained without any additional trouble to the manufacturer, independent of the ſuperior flavour and richneſs of the ſpirits produced, which is an important conſideration; as ſuch, in conſequence thereof, will always command a higher price at market. Under all theſe circumſtances, can it excite ſurpriſe, that manufacturers have had recourſe to England for grain, ſeeing that their intereſts has thereby been ſo materially promoted. In fact, the ſimple queſtion is, whether an article that yields two pounds fifteen ſhillings, is capable of paying the ſame *quantum* of tax, as another that yields three pounds eight ſhillings and ninepence? We think it is not; and that the whole leſs conſequently

quently muſt fall upon the grower of the article, and not upon the manufacturer or conſumer.

From theſe things, we truſt it will appear that barley of the growth of Scotland is unable to pay the ſame duty as may be exacted from Engliſh barley; and that the natural difference in quality is artificially increaſed, in direct proportion to the rate of duties impoſed. The juſtice of our argument is demonſtrated by the preſent ſtate of the markets; and, unleſs an alteration of the malt duty is procured, ſucceeding years will more and more evince the rectitude thereof. In a word, we are convinced, that, when Engliſh barley is ſold in Scotland at twenty ſhillings per boll, the greateſt part of Scotiſh barley will not ſell for more than twelve ſhillings. In ſome of the ſouthern counties, where qualities approach nearer to perfection, prices may run at a medium betwixt theſe two; but that the average of the whole kingdom will not exceed fourteen ſhillings, is a point which few will diſpute, who ſeriouſly inveſtigate a buſineſs of greater importance to Scotland than any that has occurred ſince the Union of the two kingdoms. An *equal* malt duty upon the barleys of both countries, is in fact a moſt *unequal* burden. It is exactly the ſame thing, in principle, as if the land-tax was aſſeſſed by the acre, inſtead of a regulated valuation; and muſt operate in every diſtrict preciſely according to the goodneſs of grain which is produced. In ſome, the evil will work its own cure; for the culture of barley will there be laid aſide. In others, it will only be partially felt; but, in all, it muſt occaſion a conſiderable change in the rural ſyſtem now practiſed, unleſs the act of laſt Seſſion is immediately repealed.

We have hitherto conſidered the equal value of the malt duty, ſo far only as it regarded the agricultural intereſts of the country; but we ſhall now ſhow its effects upon the revenue; which, in all probability, will rather be leſſened, than augmented, by the additional impoſition. On this head we ſhall be ſhort, as the ſubject lies rather out of our ſphere. If we, however, can make out, that a meaſure ſo injurious to the agricultural intereſt of the country, will not promote the very object for which it was enacted, it will be allowed, that the motives for urging a repeal, or modification of the meaſure, are conſiderably reinforced.

In Scotland three fourths of the barley raiſed is of a quality which cannot afford to pay a malt-tax; and even the very beſt is all the duty deficient, when compared with the produce gained from Engliſh grain. This, for many years back, has influenced the diſtillers to uſe inferior qualities in an unmalted ſtate, mixing it in certain proportions with the beſt grain, which they

ſelected for malting only. The proportion formerly uſed was three fourths of malt, and one fourth of barley: this was afterwards altered to an equal quantity of each; and ſince the additional duty was fully felt, a ſtill greater reduction of malt is made; each maſh containing no more than one third of that article. This reduction made in the uſe of malt, will prevent an increaſe of duty, more eſpecially as we learn that the brewers are adopting the like ſyſtem. The firſt year's produce is no rule for the permanent amount of the tax; for the ſtock in hand when the act paſſed, (and it was conſiderable), being ſubjected to the new duty, neceſſarily augmented it in a way which cannot be repeated.

As raw grain diſtilled neither affords ſuch a pleaſant nor wholeſome ſpirit as that produced from malt, we ſhould think that every wiſe government would be too careful of the health of its ſubjects, to throw temptations in their way for ruining their beſt intereſt. The depretiation of quality likewiſe furniſhes encouragement to ſmuggling; becauſe home-made ſpirits, when raw grain is uſed, cannot ſtand a competition with Dutch gin. By extending duties too far, the buſineſs may be thrown altogether into the hands of the Dutch diſtillers, and the old corn trade with that country revived. In former times, barley in great quantities was exported to Holland, and afterwards returned in a liquid ſtate, though it is certainly more for the intereſt of Britain that the profit of manufacturing the article ſhould centre at home, as be conferred upon a people to whom we cannot be conſidered as under the ſlighteſt obligation.

In order to ſhow the importance of the diſtillery trade to Scotland, we ſtate the following particulars, upon the authority of a gentleman well acquainted with every department of the buſineſs.

The number of gallons entered in the Lowlands of Scotland, ſince the 10th November 1802, is 1400. Theſe conſume 321 bolls of malt, and 642 bolls of barley *per* day, or 1926 bolls malt, and 3852 bolls barley *per* week, amounting to above 300,000 bolls *per annum*. The gallons entered in the Highlands are ſuppoſed to be more numerous, though, from the different mode of working adopted, a ſmaller quantity of grain will be manufactured. At all events, the barley uſed in the diſtillery of Scotland, may be eſtimated at 500,000 bolls; and if encouragement is furniſhed by heavy duties, to import only one third part of that quantity, the loſs to the agricultural intereſt of the country will be ſeriouſly felt. The ſubject calls for the earlieſt attention of the landholders in every quarter; and, that it has not hitherto been taken up in a prompt and deciſive ſtyle, muſt be attributed to the imperfect

imperfect view taken of the bearings and consequences of the act of last Session.

We intended to have offered some remarks upon the arguments used at the county meetings, by certain gentlemen who opposed an application to Parliament for redress, but want of room prevents us from doing more than merely noticing a few of them.

In one county where the farmers came forward, in a dutiful manner, with a petition for assistance from the gentlemen assembled, we learn that their application was successfully resisted by an honourable gentleman, upon the principle that a half malt-tax was orginally a favour granted to Scotland for the encouragement of agriculture, and that the period was now arrived when it might be safely withdrawn. Probably this gentleman only repeated some of the arguments used at a previous meeting, when *another* favour was also withdrawn; for we have a higher opinion of his good sense and abilities, than to suppose he really considered a reduced malt-tax as a boon, but rather as an act of justice to his native country. If our opinion is erroneous, we must refer that gentleman to the speeches of an eminent person, to whom he is nearly related, made in the House of Commons, during Lord North's administration, wherein the iniquity of subjecting the barleys in Scotland to the tax levied in England, is demonstrated in much stronger language than is in our power to use.

But in another county, the act of last Session was supported on different grounds, by a gentleman who has long figured in every matter that related to the distillery of his country; who once attempted to get malt taxed according to its weight, without reflecting that weight is no criterion for ascertaining saccharine substance; and who, several years ago, had the address to convince the prime minister, that a reduced tax would bring a greater sum into the public coffers than one by which six times more money was levied. This gentleman took up the question upon public-spirited principles; and, according to him, as members of a great and united empire, we ought every one of us to join hand in hand, and bear an equal share of the national burdens. This to be sure was very sound doctrine in the abstract, but assuredly did not support the act of last Session; for the object of the motion then before the meeting was merely to procure the very equalization he contended for, and to preserve Scotland from being overloaded. We understand, also, that arguments from expediency were much used on this occasion, particularly that any exemption in favour of Scotland would set the northern counties of England in a flame. It might have been replied, 'Leave these counties to take care of themselves. They have paid a full malt-tax ever since the duty was originally imposed; and property has been purchased under that burden. Assuredly a table of taxes cannot be formed upon geographical prin-

ciples; but as Scotland has enjoyed an exemption ſince 1725, no good reaſon has been ſhewn why it ſhould now be withdrawn; and without doing that, you don't make out your caſe. If the tax was now to be laid on for the firſt time, your arguments might be relevant; but under the circumſtances of the buſineſs they do not apply, and might be uſed with equal propriety in ſupport of an act impoſing an equal land-tax in both countries. You may tell me, that ſtatute-law (in other words, the articles of the Union,) regulates the latter; but has not the other been regulated by common law, or, which is the ſame thing, by uſe and wont, for ſeventy-eight years? Now, it may be remembered that you once boldly affirmed, in that very chair, that common law was above ſtatute law; conſequently, if you was then right, a ſtronger caſe may be made out for a reduced malt-duty than what can be produced in favour of the rule by which the land-tax is collected.'

Before we leave this ſubject, we ſhall juſt ſtate, that accounts from all parts of Scotland confirm the opinion we have given upon the act of laſt Seſſion. In ſome counties the greateſt part of laſt barley crop ſtill remains on hand; and in others, where ſales have been partially made, the prices given are much below the rates at which it can be cultivated. Under all the ſtoppage and declenſion of the home trade, importations from England have gone briſkly forward; and ſo long as barley can be got in that quarter, we venture to predict, that the principal dealers will from thence receive their ſupplies. It is their intereſt to do ſo till Scotch barley finds its full artificial level; and in another ſeaſon, if the malt-duty is not altered, this will inevitably happen.

All our letters of intelligence concur in repreſenting the preſent ſeaſon as the moſt favourable for ſeed work that could be wiſhed; and though the weather was variable and uncertain till the middle of March, when the work commenced, yet an hour has hardly ſince been loſt. In the upland diſtricts labour was finiſhed much earlier than cuſtomary, which it is to be hoped will be followed by the moſt beneficial effects. The young wheats, at the date of theſe communications, were conſidered as in a promiſing ſtate, and clovers and other graſſes in a thriving way; but we dread that the perilous weather ſince experienced (the moſt diſmal ever felt at this ſeaſon) may prove vaſtly injurious to their future progreſs.

The grain market has not varied much in the courſe of this quarter, though ſales are far from being briſk, eſpecially for malting barleys, which, as already ſaid, ſtill remain extenſively in hand. Wheat and oats keep tolerably ſteady, and the demand ſeems equal to what is preſented. Beans and peas, though not conſidered as yielding well, have lately experienced a depreſſion, which is the more ſurpriſing, eſpecially when their increaſed value is attended to, now that they are ſufficiently dried.

Fat

Fat cattle and ſheep maintain their former prices; and hitherto little tendency to fall hath been diſcovered. Great ewes, or ewes with lamb, have brought about 10l. *per cent.* more than laſt year. Indeed the advance upon live ſtock is, in every reſpect, only favourable to the breeder; for the feeders have rarely reaped more than ordinary profits.

*April* 23. N.

## *Extracts from Private Correspondence.*

### SCOTLAND.

*Letter from a Gentleman in Berwickſhire, March 29th.*

'So fine a ſeed time as we have had in this eaſtern corner, has, I believe, been ſeldom remembered. Not an hour but the harrows could go with eaſe and effect, except two froſty mornings; and even then, all was well at 11 o'clock. Every body hereabout ſeems to have finiſhed beans and oats; and all are buſily employed preparing for hatting peas and barley, and croſſing their potato and turnip land.

'It has often been conſidered as advantageous to hire horſes for plough work; but, from ſome things which have lately come under my obſervation, I am ſatisfied that a very great loſs would be ſuſtained, were ſuch a cuſtom generally adopted. The firſt requiſite for cleaning land foul with root-weeds, is to get the plough to the bottom of the vegetable mould, ſo as to reverſe every root; but this cannot be got when the work is executed by hired horſes. Such are uſually unable to turn the ſoil to a ſufficient depth, or their owner has a ſtronger deſire to get over the ground for his own intereſt, than to attend to the orders of his employer. The price paid per acre, when ploughing is executed by contract, has led aſtray many writers on rural œconomy; for if the work is ſufficiently performed, the charge is perhaps nearly double the ſum uſually eſtimated; and the cauſe is obvious.

'Could John Bull do a few things, 1. Commute tithes; 2. Grant leaſes on improvement; 3. Regulate the poor on rational principles; 4. Commute ſtatute labour; 5. Divide commons;—John would treble his land rents in twenty-five years, increaſe his population to a vaſt extent, and, of conſequence, immenſely extend his manufactures. All theſe things are, in my humble opinion, infinitely better ordered in Scotland than in England.

'Graſs parks, ſo far as they are hitherto let in Berwickſhire, are, generally ſpeaking, lower than laſt year, probably owing to the ſcarcity and dearneſs of ſtock, and the ſmaller production of caſh from the barnyards, leſſening both the powers and ſpeculative ſpirits of our farmers.'

*Selkirkſhire*

*Selkirkſhire Quarterly Report.*

Owing to the cold barren weather, and the deſtructive ravages of the grub-worm experienced laſt year, hill paſtures produced a leſs quantity of graſs than an average; conſequently ſheep, at the end of autumn, were generally rather inferior in condition to what they have been in former ſeaſons. The winter months, however, were ſo mild and favourable to vegetation, that ſtock of all kinds improved conſiderably. From January 9th to February 23d, (with the exception of a few partial thaws), a continued froſt prevailed, yet fortunately attended with no heavy falls of ſnow; ſo that the low grounds were either black, or ſlightly covered. To the 20th March, the weather was very variable; and, ſince that time to this date, has been ſo genial, that vegetation has advanced with a rapidity ſeldom witneſſed in this hilly diſtrict.

Draught or great ewes, particularly thoſe of the black-faced or foreſt breed, maintain high prices; and the advance ſince laſt year is from one to two ſhillings per head. In ſeveral places, the diſorder called *the ſickneſs* has ravaged the flocks, and occaſioned much loſs. In ſome inſtances, not fewer than one fourth of the original number have fallen a prey to this malignant diſeaſe; but, generally ſpeaking, the loſs has been moderate.

In many places, the oat-ſeed was finiſhed in the beginning of this month, and on ſome farms the whole of it was fairly brairded at that time. Indeed, circumſtances of every kind have been ſo favourable, as to furniſh a well-grounded hope, that a plentiful and luxuriant crop of corn and graſs for the food of man and beaſt will be the neceſſary conſequence.——*April* 12.

*Letter from a Gentleman in Aberdeenſhire, April* 14.

'The oat-ſeed in this county is finiſhed; and in ſome places it was concluded ten days ago. The ſeaſon has been hitherto very favourable; but we begin to be afraid that the drought will hurt the ſpringing of the corn on dry ſoils. At preſent, the weather anſwers well for giving a ſecond ploughing to the fields deſtined for turnip, and for harrowing and clearing the ground of various kinds of weeds. Some people are beginning to ſow bear, or big, which is our variety of barley; and a greater quantity will be ſown in this month, than has uſually been ſown in April. Unfortunately, we have very little demand for barley at any price; and many are giving it to their horſes, oats being comparatively the moſt valuable crop, owing to the very high tax on malt. You juſtly complain that Scotiſh barley is inferior to Engliſh barley; but bear or big is ſtill more inferior; and the agriculture of Aberdeenſhire muſt be deeply injured, if the late impolitic and exceſſively high tax on Scotiſh malt is continued. Oat-meal generally ſells at 15s. per boll wholeſale, and is retailed in the market at 1s. per peck. Horſes are very dear, and the demand for them is conſiderable. Cattle alſo keep high; but, excepting for milch cows, there is little demand. Ryegraſs ſeed is very dear, and can with difficulty be got at any price.

'A

'A very great quantity of grain, eſpecially bear, is ſtanding in the ſtack-yards; and from the great riſe in the wages of farm-ſervants and labourers, the farmers, even in the low diſtrict of the county, find this is rather a loſing year. In the higher parts, they ſuffered deeply from the froſts in September. But it is to be hoped, that this warm weather will be of eſſential ſervice to the weak ſeed, which many of them were obliged to ſow, not having any better. A gentle dew, inſtead of the froſts which we have had every night, and a few ſoft ſhowers, will be neceſſary for promoting vegetation in theſe higher parts, and on the thin ſoils of the lower diſtrict of the county.'

*Moraviſhire Quarterly Report.*

Since the middle of laſt month, the weather has been uniformly good, and oats were put into the ground under the moſt favourable circumſtances. The wheat looks extremely well on all ſoils, except clays, where it ſcarcely promiſes to be a medium crop. When this much is reported, little elſe can be ſaid favourable for the farmer's intereſt.

Grain markets were never duller. Our wheat was bought up, and lies moſtly on the merchant's hand, at 25s. per boll; and oats are purchaſed ſparingly at 12s. 9d. per 4 firlots; but for barley no price can be quoted. It is abſolutely unſaleable, and in all probability will remain a drug through the ſeaſon. If crop 1803 is equally productive over the iſland as the laſt, and no alteration of the preſent duty on Scotiſh malt is obtained, it need not excite ſurpriſe to ſee the produce of the north ſold in Mark-Lane to the London poulterer at a price ruinous to the Scotiſh land-owner and farmer.

Few people have got their winter ſtock of cattle diſpoſed of; and when they are ſold, a ſmall profit will only be got for keeping.

Beef ſells in Elgin at 7d. per lib. of 17½ oz.; but the demand is very limited. Hay at 4d. to 7d. per 20 lib. Amſterdam.——16. *April.*

*Letter from a Farmer in Roxburghſhire, April* 16.

'The cold froſts of February and firſt week of March were ſucceeded by very favourable weather for putting the ſpring wheat, beans, peas and oats into the ground; and already they preſent a ſtrong ſhoot and healthy appearance. Barley ſeed is now commenced; but where the ground is inclined to clay, or turnips were eaten, we will be under the neceſſity of giving up, as the ſurface is become ſo hard, that it cannot be reduced in a ſufficient manner. If rain does not ſoon arrive, that kind of land muſt be left unſown; and, till a change comes, we are preparing the potato and turnip land, which works admirably.

'Rye-graſs ſeed is remarkably high-priced, particularly what is warranted to be *perennial*. In this county, we have lately ſuffered much from *annual* ſeed, which as yet can hardly be diſtinguiſhed by appearances; conſequently, are obliged to alter our ſyſtem, and to plough up graſs land ſooner than formerly. The lambing ſeaſon has proved good, and a full quantity of lambs may be expected in our markets. Fat cattle and

and ſheep are holding good prices, though rather lower than a few weeks ago; which proceeds from the winter food being exhauſted, not from the quantity of fat ſtock in hand. Sales for lean beaſts have not yet commenced; but milch cows are ſelling extravagantly high, and young calves bring a higher price than year olds did a few years ago.

'The corn markets are very dull, and the ſtack-yards remain better filled than uſual. As for the malt tax, I do not think that many landlords or tenants have ſeriouſly conſidered the ſubject. In one point, I am clear, that as Engliſh barley is ſuperior to Scotch, the latter is unable to ſtand under the ſame duty. However proud we may be, on account of the perfection of our rural economy, ſtill an Engliſh climate is wanting: this is an improvement which all our exertions cannot accompliſh, and renders our barleys inferior to thoſe of our ſouthern neighbours.'

*Letter from a Gentleman near Perth, April 18.*

'The wheats early ſown look vaſtly well; but the later ſowings after clover and peas, in many places, appear very indifferent; and none are ſo forward as laſt year at this time. Graſs fields, in general, preſent a promiſing aſpect, and, from the mildneſs of the weather, will ſoon afford a refreſhing bite for live ſtock. Owing to theſe circumſtances, I think it almoſt certain that cattle and ſheep will continue to command high prices, at leaſt for ſome time to come.

'The ſpring ſeed-work commenced about the middle of March, though the weather was rather moiſt, for ſome ſoils, till about the end of the month. Both peas and oats got a favourable ſeed bed; and a fine braird, eſpecially of oats, now ſhoots up. We have at this time weather to our wiſh for preparing the barley land, and ſome people have even ſown that grain. Indeed, in comparing the early and late barleys of laſt year, the difference is ſo great in quality, that a doubt might be held whether they are both the produce of the ſame ſeaſon. This difference furniſhes an inducement to ſow early; but it will be eight days, at leaſt, before a general ſowing takes place.

'In this quarter of the country, there is but little demand for grain, and none at all for barley. Many people had good hopes, for a while, that an alteration would be made in the malt duty, which would have occaſioned an increaſe of barley purchaſers; but as yet no favourable anſwer is received to the reſpectable repreſentations offered on the ſubject.'

*Argyleſhire Quarterly Report.*

During the winter, we had in this county leſs froſt and ſnow than uſual, the weather having been generally wet, and often ſtormy. The ground having been thus deluged with rain, was not in condition to receive the ſeed ſo early as uſual. But the loſs is amply made up by the fineſt weather ever known at this ſeaſon, which we have had for a fortnight paſt: ſo that the ſowing will probably be concluded yet at the uſual

uſual time. The ſpring of graſs, within this fortnight, is uncommonly rapid; a circumſtance highly favourable to the ſheep, as was alſo the ſeaſon of dropping their lambs: ſo that the loſs will not probably be found very conſiderable on this kind of ſtock, which is now become the great ſtaple of the Highlands. Meal continues, and is likely to continue at a reaſonable rate, though a great deal has been imported from Ireland, owing to the deficiency of the laſt crop of potatoes, which may be called our ſtaff of bread. It has been generally ſold about 16d. the peck of 10 lib. Bear, which is moſtly made into whiſky, with or without licenſe, has ſold at the rate of 16 or 17s. the Linlithgow boll, or from 25 to 26s. per quarter of eight buſhels. Potatoes are now as high as 1s. the peck. Butcher meat 6d. the Engliſh lib. The price of all ſorts of cattle promiſes to exceed even that of laſt year, though then high beyond all precedent. Land lets and ſells in proportion.—— *April* 16.

## *Aberdeenſhire Quarterly Report.*

For a month or five weeks paſt, we have enjoyed one of the fineſt ſeaſons recollected by any man alive. Neither the plough nor the harrows, nor any other work therewith connected, have found any obſtruction, and both have been kept cloſely employed. This was more neceſſary in the inland parts of the county, where a ſtorm of ſnow, and frequent returns of froſt, had very much interrupted the work for two months preceding. The ſowing of peas and oats is generally over. Many have begun to ſow bear, and ſome people are altogether finiſhed.

Grain here, as in other places, is much reduced in price. Oat meal may be quoted from 13 to 14s. 6d. per boll. Oats in proportion, according to qualities. Bear ſcarcely finds a purchaſer at any price; of courſe, the culture of that grain is much curtailed, and muſt be ſo ſtill more if the preſent malt duty continues.

Graſs came forward very briſkly for ſome time; but the continuance of drought, with frequent froſts at night, has in ſome degree checked its progreſs. Graſs parks, which are already ſet for the ſeaſon, have nearly maintained their former value. Cattle, eſpecially lean ſtock, are much above prices formerly reported; indeed there does not appear to be more of them on hand than is neceſſary to ſtock the graſs; of courſe little alteration can be looked for. Sheep markets are not yet commenced; but they are expected to be equally high in price as thoſe for cattle.

The price of labour is ſtill advancing very rapidly. Thus, when years of ſcarcity advance the price of corn to an extravagant rate, the price of labour muſt be advanced in proportion, that the people may *live*. Again, if corn falls exceedingly low, the labourers can enforce their own demands almoſt to what they pleaſe, becauſe boarding is cheap, and they can afford to be idle. This falls harder on the north country farmers, as few of them employ married ſervants, which cannot

be attributed ſo much to the farmers, as to a prevailing practice, for time immemorial, of letting detached pieces of land to people on account of getting their harveſt work. In ſome caſes, no work is performed, but rent paid in lieu of it. The lower orders have hitherto lived very comfortably in that way; and they are ſo ſenſible of it, that, after a man gets a wife, he conſiders it as bondage and ſlavery to be a hired ſervant. He is a bird of paſſage, that will continue no longer than he can find another opening; and his ſervice, in the mean time, is far from being pleaſant to thoſe who employ him.—*April* 16.

*Dumfrieſſhire Quarterly Report.*

THERE has ſeldom been a better ſpring-ſeed ſeaſon than that which is now about being cloſed. The moderate but frequent froſts in February, put the land in the moſt kindly ſtate. About the beginning of old March, the dry grounds were in good order; and in ten days thereafter, the wet ſoils were in a ſuitable condition to receive the ſeed. The oats are now almoſt all above ground, and appear ſtrong and cloſe. The quantity ſown ſeems not quite ſo much as in the laſt or former year. Barley ſeed is now begun; and the ground is in excellent order for receiving it. The early ſown wheat appears healthy and forward; but that ſown after Martinmas ſeems feeble and backward.

The general meeting of the landholders of this county was unanimous in an application to Parliament for moderating the malt tax. No matter that has been under their conſideration for many years, is thought to be of more intereſting conſequence. Our barley never can compete, in our own country, with that from the ſouth, if ſubject to the ſame duties. The fair equalized duties hitherto paid for malting barley, have been the cauſe of the culture of that grain being increaſed, and in a great degree extended our turnip huſbandry. In ſhort, good cultivation in this county appears to depend upon barley; and ſuch a check as the immoderate duty impoſed laſt Seſſion, ſo unproportioned to the grain of Scotland, may prove hurtful, in an extreme degree, to both landlord and farmer.

The cattle markets are longer of beginning than was expected. The demand from the ſouth has yet been little; but if there be no extraordinary check to vegetation, it is ſuppoſed there will ſoon be many buyers. The demand for young ſheep has not either been equal to expectation. A further advance in the price of ſtock of any kind ſeems not to be wiſhed for by any reaſonable perſon: but, from the failure of ſheep in Yorkſhire, and other parts in the north of England, and from the number of cattle that ſtill come to the ſhambles before they are at maturity, there is reaſon to think that prices muſt keep up, at leaſt while the increaſed number of purchaſers of meat are enabled, by high wages, to pay for it.——*April* 18.

*Letter from a Farmer in the Upper Ward of Lanark, April* 18.

'In this high diſtrict, we have had a moſt favourable ſeed-time; and the ſowing of oats became general about the 20th of March. Seed-work

work is now nearly finiſhed, and we are buſy giving our lands the ſecond furrow for potatoes and turnips. The early ſown oats make a flouriſhing appearance, and our young graſſes promiſe well. Cattle of all deſcriptions keep at high prices, and ſo do ſheep; black-faced ewes from 20s. to 25s. and wedder hogs from 16s. to 19s. We have only a ſmall demand for grain from Glaſgow, which in general is our beſt market.'

*Wigtonſhire Quarterly Report.*

The weather ſince laſt Report, has been exceeding variable; nearly to the latter end of February froſt and rain alternately. March, and to the middle of this month, although interrupted now and then with heavy ſhowers of rain, rather a good feed time than otherwiſe to thoſe who have had induſtry ſufficient to '*catch the ſeaſon as it flies:*' a precept well worthy the attention of every huſbandman.

The late partial malt-tax has cauſed many farmers give up ſowing bear, ſubſtituting potato oats in its place, until ſuch time as the *wiſdom* of the Legiſlature ſee the juſtice and ſound policy of taxing malt in proportion to the ardent ſpirit it contains, and not according to the meaſure or weight.

Wheat and new graſs have a very healthy appearance; and though our vegetation was by no means early, it has had but little interruption ſince it began. The price of grain at preſent ſeems to look a little upward. Oats from 20s. to 30s. *p.* boll; choice ſeed Potato Oats 40s.; Bear from 25s. to 30s. *p.* Galloway boll; Wheat from 5s 6d. to 7s. 6d. *p.* buſhel; Potatoes 1s. *p.* buſhel. Butcher Meat much about 6d. a pound in quarters. Choice pieces of Beef 8d. *p.* lib.

The prices of lean ſtock ſtill keep high. We had a very fine ſhew of Galloway cattle, beſides a few ſtall-fed Iriſh bullocks, at the Glenluce new market on Thurſday laſt; and though the dealers rather appeared ſhy, thoſe who bought gave handſome prices. One great cauſe of the dealers rather keeping off, was, the graſs not yet being ready to receive ſtock. But ſuch indeed is the extravagant price of young cattle, that many think of laying aſide tillage, and attending chiefly to breeding and rearing cattle, and, *if poſſible*, to preſerve the equilibrium between grain and ſtock. One year, we cry for bread! The next, a ſuperabundance is poured in amongſt us from all quarters. Can no effectual means be found to enſure *at all times* ſeed to the ſower, and bread to the eater? At a period when the knowledge of good huſbandry is diffuſed throughout the remoteſt parts of the Britiſh empire, ſtill we behold a vaſt ſurface lying in its natural ſtate! Here the philanthropic mind looks forward, and, with a pleaſing ſatisfaction, views in proſpect the happy period when all thoſe waſte lands ſhall be brought into a ſtate of cultivation—feeding millions! But I am afraid I am wandering from the ſubject of a Report. Adieu.——19th April 1803.

*Berwickſhire Quarterly Report.*

This quarter has been uncommonly favourable for the different field operations. The froſts in February having gone off without rain, left

the land in a fine ſtate for harrowing. A good deal of turnip land was ſown with wheat in the beginning of March: the ſowing of beans, peas, and oats, followed in courſe, and continued without interruption till the whole was completed in the higheſt order. Barley ſeed is now pretty well advanced, and many of the turnip fallows have already got a ſecond furrow.

From the extent of turnips which remained unconſumed at the beginning of this month, a conſiderable reduction in the *letting* price took place; but they afford ſo little nouriſhment at this advanced period of the ſeaſon, when compared with ruta baga, that the latter root is evidently getting more and more into uſe, and will probably, in a few years, entirely ſuperſede the common turnip as a ſpring feed.

A finer lambing ſeaſon we have ſeldom witneſſed, and paſtures are ſo forward as to afford a good bite to the ewes and lambs. Winter wheats received a check from the bleak winds in February, but have now a healthy promiſing appearance. Young clovers are in general luxuriant; and from the kindly warmth which has hitherto prevailed, ſpring corns have made a quick braird.

In our butcher markets, mutton has recently experienced a trifling advance, the beſt being now 8d. *p.* lib. of 17½ oz.; beſt beef the ſame. Lean ſtock, both cattle and ſheep, are dearer than laſt year; but corn markets are extremely dull.——*April* 18th.

## *Eaſt Lothian Quarterly Report.*

From the unſettled weather of February, and firſt two weeks of March, the commencement of ſeed-work was protracted more than uſually happens in this diſtrict; and very little grain was got ſown before the 15th March, when the buſineſs was entered upon with vigour. Since that time the weather has been uniformly dry, generally very mild; but for ſome days paſt a degree of cold has prevailed, which rivals that of any of the winter months. Vegetation, though it ſet in with rapidity, is now completely ſtopped; and the ground is become ſo dry, that, without rain, the progreſs of ſpring crops would be trifling, even was the ſtate of the weather in other reſpects materially amended.

The winter ſown wheats do not offer ſuch a promiſing ſhow as laſt year, at this date, but the extent of land ſown with that grain this ſpring is conſiderable; and exiſting circumſtances imperiouſly call for a farther augmentation. Wheat, in fact, is the only grain that bears a price adequate to the ſcale of modern rents, and ſtands a better chance of maintaining its value than barley; ſeeing that the value of the latter is artificially depreſſed by the heavy public burdens impoſed upon the manufacturing of it into malt, ale, and ſpirits. Oats are capable of paying more money than barley, which, after all, is a tickliſh crop upon the generality of ſoils, and is raiſed at a great deal of more expence.

Markets for grain have not fluctuated much in the courſe of the quarter, though the demand has not been briſk. Beſt wheat has generally ſold from 7s. to 7s. 6d. *per* Winchester buſhel. Barley from 2s. 6d. to

3s.

3s. Some for ſeed as high as 3s. 6d. Oats 2s. 3d. to 2s. 9d. Beans and peas 3s. 9d. to 4s. 3d. *per* the ſame meaſure. The Wincheſter buſhel is not uſed in Scotland; but the prices are here reduced to that ſtandard for the information of Engliſh readers.

Fat cattle and ſheep have alſo brought much the ſame prices as formerly reported, and the quantity on hand is not ſuppoſed to be conſiderable. As a full ſupply of food was generally poſſeſſed by every farmer, the markets were not glutted like thoſe of laſt ſeaſon when articles were ſold at an undervalue, that is, when compared with the rates at which ſtock were purchaſed in the preceding autumn. Great ewes of the Highland breed advanced about 1s. 6d. *p.* head; and their lambs, from the late good weather, and plentifulneſs of food, have hitherto thriven as well as could be wiſhed.

On the 19th of this month, a ſevere hurricane from the weſt did much damage in this county. Several ſtack-yards were completely uncovered; many fields of light land, newly ſown, were ſo much blown, that ſome, it is ſuppoſed, will require to be ſeeded a ſecond time; nay, even ſome fields of clay occupied by winter wheat, and which were mellowed by froſt, received conſiderable injury. The preceding week was ſo uncommonly hot as to exhauſt the ſurface of moiſture, while the ſame cauſe rendered the ropes and covering of the ſtacks unable to reſiſt the fierceneſs of the gale, and occaſioned a ſight in many places ſomething like what may be figured when a fleet of ſhips are wrecked.

At a meeting of this county, to conſider the malt-tax of laſt Seſſion, ſome reſolutions were propoſed, and a motion was made, to inſtruct the Honourable Colonel Hope, their member, to join with other Scotiſh members, in procuring an alteration of the preſent duty. After a good deal of argument, a committee was appointed to correſpond with Colonel Hope; but, ſo far as known, the committee have not entered upon their deliberations.——*April* 22.

## *Mid-Lothian Quarterly Report.*

The froſt which commenced in the month of January, with conſiderable ſeverity, gave a ſeaſonable check to vegetation: it became more moderate in the month of February, and went off without any of thoſe torrents of rain which frequently occur at what is termed the breaking up of the ſtorm; of courſe, graſs ground was in a ſtate for ploughing as ſoon as the abſence of froſt did permit; and every other ſpecies of field labour ſoon followed in courſe.

The ſowing of oats and beans commenced about the middle of March, and continued without ſo much as a ſhower to interrupt its progreſs until all was got finiſhed. Since that period the weather has continued dry, with an increaſed degree of heat. Laſt week it was ſo vrey warm as rather to reſemble the month of July than April. Such a remarkable ſeed time is certainly in the remembrance of very few.

But on Tueſday, the 19th current, a ſad reverſe took place. It blowed a downright *tornado*, with violent blaſts of hail at intervals.

Numberleſs

Numberleſs houſes were unroofed, corn ſtacks uncovered, and ſome of them overturned. The crows neſts were upſet, and daſhed to the ground, with the young ones. The tender blades of grain and young clovers have become black, and the rye graſs plants are much blaſted.

Some farmers have finiſhed their barley ſowing; but by far the greateſt number have not yet begun it. The early ſown wheats, after ſummer fallow, look well; but the latter ones, after beans, potatoes, or clover, look very indifferent indeed, and will require a favourable ſeaſon to make them a tolerable crop.

Upon the whole, conſidering the uncommon goodneſs of the ſeaſon, vegetation is by no means ſo far advanced as might be expected; but it often happens that this circumſtance is nothing againſt the intereſt of either the farmer or gardener.

The prices of grain have continued ſteady ſince laſt Report, and are exactly the ſame to the conſumer. Any ſmall increaſe that has taken place ariſes from the ameliorated condition of the grain by the drought of ſpring. Barley continues as dull in ſale as ever, and is refuſed by the brewers and diſtillers. This muſt continue to be the caſe while they can import ſuperior barley, and manufacture it at the ſame duties with that of very inferior quality. Now that the malt laws are to be brought under review of the landholders of Scotland, it is hoped that they will give the ſubject that mature conſideration which its importance merits; and will not ſwerve from the inveſtigation, by being told, (as was anſwered, by a gentleman high in office, to the petition of the Mid-Lothian farmers), that Scotland had long enjoyed an exemption of 50 *per cent.* on the malt duties: that however wiſe this exemption was at firſt, it has now become unneceſſary: that there are ſtill a difference of about 27 or 28 *per cent.* on the duties in favour of Scotland, which is at leaſt equal to the difference between Scots and Engliſh barley. Theſe aſſertions, although true in the abſtract, and operate in favour of the conſumer, yet are irrelevant when applied to the grower of Scots barley. Of what importance is it to him, while the fineſt barley of the maritime counties in England can be brought here, at little more expence than will carry it to the London market, and at leſs expence than will tranſport it to ſome of the great commercial towns on the weſt of England; and when brought here is manufactured at the very ſame duties with the moſt inferior barley of home growth; and the ſpirits made from it cannot be carried back to England, owing to the prohibitions thereupon? This, no doubt, muſt make whiſky both more plentiful and cheap than otherwiſe it would be. But it is hoped that the policy, or rather impolicy of this meaſure, will come under the conſideration of thoſe gentlemen who now ſeem to have taken up the matter in good earneſt.

Thoſe farmers who were not deterred by the high prices from keeping their uſual number of winter ſtock, are as far advanced in thraſhing as commonly. But others, who had either leſs ſtock, or are in uſe to

diſpoſe

diſpoſe of their ſtraw at the Edinburgh market, have much more on hand than uſual; and certainly, taking the whole county, the ſtack-yards are much fuller than has been the caſe for many years back, at this period of the ſeaſon.

The Edinburgh market has been fully ſupplied for the two laſt months with fat cattle, and ſales heavy, at about a ſhilling *p.* ſtone below the prices quoted in laſt Report. Although there has been almoſt no demand this ſpring from England for cattle to the graſs, yet the prices have kept up fully equal to that of any former period.

Great ewes (that is, ewes heavy with lamb) have ſold high beyond all former example; ſome have reached 27l. which fifteen or twenty years ſince ſold at about 6l. or 7l. *p.* ſcore.

At the Houſe-of-Muir markets, there was a ſcanty ſupply at the firſt, and prices extravagant; at the other two, great numbers of ewes were brought forward, and prices dropt from 3s. to 5s. a-head. But ſome people verſant in the buſineſs allege that the fall was more nominal than real, as the goods exhibited were nearly as much inferior in value as the prices were lower.——*April* 23.

## *Fife Quarterly Report.*

In no ſeaſon has finer weather for tillage and ſeed work been enjoyed, than the one now finiſhed. Almoſt every where in this county, even on wet lands, the oats were harrowed in dry, and in ſuch fine order, as in a great degree preſages another plentiful crop. Young wheats look well; and the preparation for barley has gone on without interruption.

Sown graſs is excellent; every where the clovers are thick; and the laſt warm weather has made them advance greatly, as well as rye graſs. Flax ſeed for ſowing has been rather ſcarce, and ſold ſo high as 2s. *per* lippie, and 7l. 7s. *per* hogſhead; and a quantity equal to the demand of this county (where much is generally ſown) could hardly be procured. Potatoes are preſerved in large quantities, and in good order; but, owing to the low price of grain there is little or no demand for them. They are advanced to 7s. *per* boll for ſeed; but general qualities cannot be ſold, and they muſt be conſumed with cattle.

The price of barley continues very low. Such as weighs 17 ſtone Dutch weight *per* boll, ſells at 14s. 6d. Inferior qualities have been ſold ſo low as 7s.; and a very large quantity remains in the ſtack-yards. This is occaſioned not only by a low price, but from there being no market; the brewer and diſtiller uniformly preferring the fineſt qualities; and in ſome caſes have declared, where the quality was poor, that they could not afford to pay duty for it, even if the farmer would give it for nothing.

Oat-meal continues about 16s. *per* boll. Labourers wages have riſen conſiderably of late; 1s. 6d. *per* day is current, and 1s. 8d. in many places for good hands. Fat cattle are ſtill high priced; but lean ſtock bought

bought in autumn, and kept on ſtraw, will pay very poorly for winter keeping. Straw of all kinds is plentiful and much unthraſhed victual remains.——*April* 19.

*Fiars of Grain in Scotland, Crop* 1802.

East-Lothian.

Per Boll Linlithgow meaſure.

| | Wheat. | | Barley. | | Oats. | | Peas. | |
|---|---|---|---|---|---|---|---|---|
| | s. | d. | s. | d. | s. | d. | s. | d. |
| Beſt, | 32 | 1½ | 20 | 8¼ | 16 | 6½ | 16 | 1½ |
| Second, | 28 | 8½ | 19 | 2¼ | 15 | 4¼ | 15 | 6 |
| Third, | 26 | 11¼ | 17 | 1½ | 14 | 6¼ | 15 | 0 |

Mid-Lothian.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Beſt Wheat - - | 26 | 6 | Beſt Oats - - | 15 | 6 |
| Second do. - - | 23 | 0 | Second do. - - | 13 | 6 |
| Beſt Barley - - | 17 | 6 | Beſt Oat Meal - - | 16 | 8 |
| Second do. - - | 15 | 6 | Peas and Beans - | 16 | 0 |
| Third do. - - | 14 | 0 | | | |

Berwickſhire.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Wheat - - | 24 | 8 | Merſe Oats - - | 14 | 6 |
| Merſe Barley - - | 16 | 6 | Lammermuir do. - | 13 | 6 |
| Lammermuir do. - | 15 | 0 | Peas - - - | 20 | 0 |
| Rough Bear - - | 13 | 0 | Oat Meal, 8 ſtone per boll | 15 | 0 |

Roxburghſhire.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Wheat - - | 38 | 4 | Barley - - - | 21 | 0 |
| Peas - - - | 22 | 6 | Oats - - - | 18 | 0 |
| Per Berwick boll of 6 Wincheſter buſhels. | | | Per Teviotdale boll of 7½ Wincheſter buſhels. | | |
| | | | Oat Meal - - | 30 | 0 |
| | | | Per load of 280 lib. avoirdupois. | | |

Perthſhire.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Beſt Wheat - - | 25 | 0 | Peas - - - | 13 | 6 |
| Second do. - - | 22 | 0 | Rye - - - | 15 | 6 |
| Beſt Barley - - | 17 | 0 | Oat Meal - - | 15 | 6 |
| Second do. - - | 15 | 0 | | | |
| Beſt Oats - - | 14 | 6 | | | |
| Second do. - - | 13 | 0 | | | |

Mearns,

Mearns.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| White Oats, with fodder | 17 | 0 | Peas, with fodder - | 21 | 0 |
| Do. without fodder - | 14 | 6 | Do. without fodder - | 16 | 0 |
| Bear, with fodder - | 15 | 6 | Wheat - - - | 21 | 0 |
| Do. without fodder - | 14 | 0 | Oat Meal - - | 15 | 1 |

Moraysfhire.

| | s. | d. | | s. | d. |
|---|---|---|---|---|---|
| Wheat - - - | 25 | 0 | Oats per 5 firlots - | 17 | 0 |
| Peas, Beans, and Rye | 17 | 0 | Oat Meal per 9 ſtone | 15 | 1 |
| Barley or Bear - | 21 | 0 | | | |

Average Price of Corn per Quarter in Great Britain for the week ending April 9th.

| | *England.* | | *Scotland.* | | | *England.* | | *Scotland.* | |
|---|---|---|---|---|---|---|---|---|---|
| | s. | d. | s. | d. | | s. | d. | s. | d. |
| Wheat - | 56 | 9 | - 7 | 41 | Beans - | 32 | 5 | - 32 | 7 |
| Rye - | 36 | 8 | - 28 | 11 | Peas - | 37 | 2 | - 31 | 11 |
| Barley - | 25 | 11 | - 22 | 1 | Oat Meal | 36 | 3 | - 34 | 0 |
| Oats - | 19 | 6 | - 17 | 6 | Per ſack of 280 lib. avoirdupois. | | | | |

## ENGLAND.

*Letter from a Gentleman near Stafford, April 4.*

'The weather has lately been very mild, and we have enjoyed a fine lambing ſeaſon. From what I can learn, very few lambs have been loſt; and they promiſe, under a continuation of theſe circumſtances, to be of excellent quality. The wheats of this county are in a very thriving ſtate; and ſeed work of all kinds is far advanced. The grain markets have been dull ſince my laſt; and wheat has ſold at 8s. 6d.; barley, 3s. 9d.; oats, 2s. 9d.; all per buſhel of 9½ gallons. At laſt market, there was a trifling advance.

'Notwithſtanding the low price of corn, land is ſtill on the advance; and the moment a field is in the market, there is ſure to be many competitors. Arable land lets from 20s. to 40s. per acre; but meadow, and good graſs land, draw from 60s. to 63s. Beef and mutton keep up in price, viz, from 7d. to 8d. per lib.; bacon, 9d.; Dorſet lambs, about three months old, have currently brought 30s. each.'

*Letter from a Farmer in an extenſive Breeding Diſtrict, April 15th.*

'Owing to the great deficiency in the quantity and quality of the fodder and other food during the late years of ſcarcity, great numbers of cattle died, and many were ſlaughtered *lean*, in almoſt all parts of the kingdom; which, with the increaſed conſumption of animal food, in conſequence of the ſcarcity and high price of grain, undoubtedly cauſed that defalcation in the ſupplies of live ſtock, which has of late

been so much felt in most of our cattle markets. If, however, the seasons are favourable, and if the spirit for rearing live stock, which at present prevails in this and other districts, continue, it is probable that, in a few years, the consumers will experience considerable relief. Almost every farmer has reared, in last year and this, about one third more calves than customary: and the number of swine has also been much increased. The inclement seasons, which caused the late alarming scarcity of corn, proved also destructive to the sheep; but the loss was, in a great degree, counterbalanced by the vast number of lambs reared during the succeeding propitious ones. Unluckily, however, a destructive rot took place among them last autumn, especially those on strong and retentive soils, which has made considerable havock.'

*Letter from a Farmer in Wales, April 15th.*

'The weather has been particularly favourable for these seven weeks past: [illegible] setting on fair with our barley seed. The land never worked better than it has done this year; and, if the weather continues favourable for another week, most of our seed work will be over, except on the clays, where they are crying out for rain. Our winter sown wheats (as far as I have seen) have looked thin and weak from the beginning; and the long continued frost in January and February (though we had no cutting winds) has proved fatal to a great deal. Some fields that were sheltered, and in good heart, are looking well; but they are but a small proportion of the country in general. Owing, I suppose, to the poor prospect of wheat on the ground, and the very low price of barley, and a favourable spring, there has been more wheat sown this spring than ever was before in Glamorganshire; many having sown wheat where barley was originally intended; which at present has a better appearance than the winter sown fields. Oats and peas braird very fine. I have seen but few beans. The first sown barley begins to look green. Corn of all kinds is dull of sale. Good wheat will fetch 20s. our Welsh bushel, or about 8s. Winchester; but what is pitched in our market is only a few sacks, which is sold in pecks, and half pecks, to people who buy corn for their own use. The millers will not give more than 18s. for 168 pounds. They buy all by weight; and the wheat this year weighs very light. There is very little demand for barley. The very best is not higher than 3s. the Winchester bushel; and oats about 2s. Cattle and sheep still hold their price. At Cardiff fair, the second Wednesday in March, there were but few buyers; and, of course, the prices lower; but, since that time, the demand has increased, and they are now full as dear as last year. Owing to the early spring, and the fine appearance of grass, cows and calves, and ewes and lambs, are particularly dear. Pigs are not so high-priced as they have been; but store pigs are still very high. Butcher meat dear. Beef, mutton, and veal, 8d. and 9d. per pound; Pork at 7d.; Butter, 1s. 3d; Cheese, from 5d. to 9d., according to quality. The price of labour is advancing with us every week; 2s. per day seems now to be the common hire; and men are not to be got even for that. The thrashing of our corn is now

now a ſerious affair; and, if I continue to plough, muſt try to get a thraſhing machine. My farm being free of tithe, induces me to plough more than I otherwiſe would do.'

*Yorkſhire Quarterly Report.*

THE ſpring ſeed has in few ſeaſons been more favourably committed to the ground. The weather was for ſeveral weeks ſo dry and fine, that it muſt generally have been the farmer's fault if any neceſſary buſineſs of this kind has been neglected. We had a very ſeaſonable ſupply of rain laſt week, which not only promoted vegetation materially, but alſo much improved the condition of ſome lands, which had been rendered too dry and hard for ſowing. The growth of every thing is very promiſing; and though ſlight froſts occur, there is every indication of an early and abundant ſupply of graſs. The young wheats are in general luxuriant and healthy.

The turnips have been preſerved through the winter, in a ſtate unuſually ſound and nutritive. A conſiderable quantity remains to be eaten. Hay is more plentiful than was expected; and is about 4l. 10s. per ton. The ewes are prolific; and the lambs, in ſo fine a ſeaſon, have received no check in their thriving.

The clovers, tares, and other ſeeds, are very forward and productive; and the ſpring and ſummer fallows are proceeding at an eaſy expence of time and labour.

The beſt wheat is about 7s. 6d.; Barley, 4s.; Oats, 2s. 6d.; Beans, 4s.; Potatoes, 2s., per buſhel.

Cattle and ſheep, both fat and lean, are at high prices, though apparently declining at preſent. The breeding of calves is more attended to now than formerly. Beef, mutton, veal, and pork, are about 8d. per lib.; butter, 15d. —*April 15th.*

*Norfolk Quarterly Report.*

THE young wheats appear to be in a healthy and thriving ſtate; and the ſpring ſeeds have been put into the ground under the moſt favourable circumſtances. The weather is at preſent ſo warm, that every article ſprings with the greateſt rapidity; and the proſpect is as favourable as could be wiſhed for a ſecond good crop. A good ſtock of all ſorts of grain in hand; but, in conſequence of the undecided ſtate of the nation reſpecting Peace or War, every article is dull in ſale, and the demand ſmall. The ſhipping prices at Lynn are—Wheat, 53s.; Rye, 37s.; Barley, 22s.; Oats, 17s.; White Peas, 38s.; Grey, 33s.; Beans, 29s.; all per quarter of 8 Winchester buſhels, and free on board.

*Eſſex Quarterly Report.*

THE peculiar fineneſs of the ſpring has permitted the ſeed to be put into the ground in the moſt favourable manner. As ſoon as the froſt left us, which was about the middle of February, bean-ſowing commenced; and in the beginning of March the ſowing of peas, oats, and barley became general. We had one or two ſnowy days, which retard-

ed our progreſs; but with that exception the weather has been truly delightful.

The froſt was very ſevere in December and January. One morning I obſerved the thermometer to be only 3 degrees above the cypher, in a north aſpect, where it was rather ſheltered. We had during this ſeaſon little or no ſnow upon the ground, ſo that the young wheats were injured; and vegetation has been ſo much impeded by the grub worm, that there is not above two thirds of good plants. Some farmers have ploughed their wheats up. This, however, is the caſe but with a few individuals; and I yet hope they will branch and get together, as they are certainly improved after having been hoed. Some think that had we rolled them ſooner, or immediately after the froſt, we ſhould have been benefited by it, as the ground would have been rendered more ſolid, and the roots leſs expoſed to a ſecond attack. Winter tares were almoſt cut off; ſo much ſo, that I fear many will not recover, eſpecially the later ſown. Turnips were alſo much injured, but every thing being ſo far forward we ſhall not feel the loſs of them. Clover, trefoil, and the young graſſes, look particularly well; and there is every appearance of having abundance of food. The hop plants have been dreſſed, and now begin to ſhoot; ſo that poling has generally commenced in the plantations.

The ſpring corn had, throughout the diſtrict, a promiſing appearance, eſpecially barley, till within theſe few days, which is rather declining for want of rain, of which we have been now deſtitute for nearly a month; the weather continuing exceſſively warm for the ſeaſon.

Markets in this neighbourhood are governed entirely by Marklane. They were yeſterday at Chelmsford nearly as follows: Red Wheat, 42s. 54s. to 56s.; White ditto, 45s. to 58s.; Rivets, 34s. to 50s.; White Peas, 28s. to 35s.; Boilers, 35s. to 44s.; Green Peas, 26s. to 30s.; Horſe Beans, 27s. to 31s.; Barley, 21s. to 24s.; Oats, 16s. to 21s.; Malt, 38s. to 44s. *per* Quarter.—Flour, 45s. to 47s. *per* Sack.—Red Clover, 32s. to 76s. *per* Cwt.; White, 42s. to 78s.; Trefoil, 15s. to 56s.

The price of labour is very little reduced, although the neceſſaries of life are ſo much cheaper. The poor rates, however, are ſomething *lower*. In this pariſh there is a large manufactory for baize; and owing to its influence at the cloſe of the war, the rates were as high as forty-two ſhillings and ſixpence, and nearly up to the rack-rent. This laſt year they were reduced to the ſmall ſum of *twenty-two ſhillings and ſixpence* in the pound, which to be ſure gives us a conſiderable relief.——*April* 17.

*Letter from a Yorkſhire Farmer, 19th April.*

'Our ſpring grain is nearly all in the ground; even the barley. We have had the fineſt ſeaſon for ſowing I ever remember. Our turnip fallows are nearly all clean; and ploughing very forward. The lambing ſeaſon, which has been very favourable, is now nearly over; but the quantity of lambs is ſaid to be leſs than the laſt year. I am no great advocate

advocate for drilling white grain, no more than you. The very high price of feed during the fcarcity, induced a number of farmers to ufe the drill, in order to make lefs do; and, as their crops were good, the practice has, I think, rather extended. At fome future period, I may perhaps acquaint you with what obfervations I make upon the different practices.

'Fat cattle and fheep have declined in price, particularly the latter. I believe much money has been loft by wintering them. Lean ftock, though yet very high, are much lower than in autumn. It is faid there is no demand for them near London, which always lowers the Yorkfhire market.

'Wheat is nearly at the fame price as when I wrote laft; oats and beans rather lower. Barley is faid to be down, but not much. The potato oat has been much fown in England for two or three years. The farmers, however, feem to be tired of it; as, except upon very rich land, it is not productive, and is faid to be more apt to be infected with fmut than the other forts. I had, however, 20 acres fown with them laft year, and they were very good. I have 11 acres this year. They are as common with us as any other. We have alfo a new kind of wheat; but I do not know its proper name. It is provincially called *Hedge Wheat*, and is a very heavy, fine grain; but is alfo faid to be liable to fmut. I think it would be better if you could introduce the Winchefter meafure into your Magazine in any calculation that is made, as moft of the different meafures, which I fuppofe are well known in Scotland, are to us unintelligible.'

State of London Markets, Monday, April 18th.

| *Britifh Grain.* | | *Foreign Grain.* | |
|---|---|---|---|
| Wheat, Eflex and Kent | 55s. to 58s. | Baltic Red Wheat | 42s. to 52s. |
| Fine white | 60s. to 61s. | Friefland do. | 40s. to 42s. |
| Black Wheat | 46s. to 49s. | Riga do. | 30s. to 36s. |
| Rye | 33s. to 35s. | Dantzic and Zealand, white | 54s. to 58s. |
| Barley | 22s. to 24s. | Rye | 30s. to 32s. |
| Fine do. | 25s. 6d. | White Peas | 28s. to 30s. |
| Malt | 40s. to 46s. to 48s. | Grey do. | 26s. to 29s. |
| White Peas | 30s. to 32s. | Small Beans | 28s. to 30s. |
| Boilers | 40s. to 44s. | Oats, feed | 15s. to 17s. |
| Grey Peas | 28s. to 30s. | Do. brew | 18s. to 21s. |
| Small Beans | 30s. to 32s. | Do. Polands | 18s. to 22s. |
| Old do. | 34s. | All per quarter of 8 Winchefter bufhels. | |
| Oats, long feed | 16s. to 17s. 6d. | | |
| Short fmalls | 18s. to 21s. | | |
| Polands | 18s. to 21s. | | |
| Fine | 22s. to 22s. 6d. | | |
| Tares | 7s. per bufhel. | | |

Hay, 4l. 4s. per load; Straw, 45s. per ditto, lately as high as 56s., or about 10d. per ftone Scotch weight; Red Clover feed, 74s. to 92s.; Ditto,

Ditto, foreign, 40s. to 74s.; White Clover, 60s. to 80s.; fine ditto, 95s. to 110s.; Trefoil, 22s. to 50s.; Ribgrafs, 41s. to 56s.—all per cwt. Ryegrafs, 22s. to 36s.; Saintfoin, 40s. to 45s., both per quarter; Beef, 4s. to 5s. 6d.; Mutton, 5s. to 6s. 4d.; Veal, 5s. 4d. to 6s.; Pork, 5s. to 5s. 4d.; Lamb, 6s. 8d. to 8s. 4d.—all per ftone of 8 lib.

*Northumberland Quarterly Report.*

In the laft Report, it was ftated that the froft fet in on the 10th January, which continued, with little interruption, until the 13th March. Thefe frofts were accompanied with very little, and in fome places no fnow. Of courfe, the ground was in general bare, and expofed to all inclemencies of the winter ftorms. Since the 13th March, the weather has been uncommonly fine, freth, and dry; and, though rather late for fowing beans, yet the fine tilth of the land, and the very favourable fucceeding circumftances, will probably tend to make them ripen as early, and be as productive, as if they had been fown a month fooner. In many places, the plants have gotten above ground, and are looking remarkably healthy.

The feed-time for oats and barley was never known finer or more favourable; though, towards the latter end of the feafon, fome lands for barley got fomewhat hard and ftubborn, and required a little extra labour of rolling, harrowing, and horfe-hoeing, to make them fufficiently pulverized for the clover and grafs feeds.

The winter wheats have fuffered in many places very much from the feverity of the frofts. On fome lands that were naked fummer fallow, ploughed fix or feven times, and put into as high tilth as poffible, the failure is remarkably great; while, in the fame field, the wheat fown after potatoes, and, in an adjoining field, after drilled beans, has received little injury. On good, ftrong foils, the crops are looking well; but the appearance, in general, is not promifing. In a journey through different parts of the county of Durham laft week, I obferved that the wheat crops are moftly weak and thin.

The young clovers made fo rapid a progrefs by the mild freth weather in March, that they were fufficiently grown to be ftocked with fheep the 1ft of April. The clovers appear every where to have taken remarkably well laft year, there being fcarcely an inftance of failure; and I do not recollect ever feeing either a fuller plant of clover, or the old paftures and meadows with fo much grafs at this feafon.

The demand for lean ftock ftill continues, with little variation of prices; for fat, the prices vary according to quality; beef, from 7s. 6d. to 8s. per ftone of 14 lib. fink; nice kyloe ftots, at 9s.; fheep, from 7d. to 8d. per lib. fink.

A remarkable fat cow, bred and fed by Mr Jobfon of Turvilaws, was lately killed at Wooler. Her dimenfions were as under.—Length from head to rump, 8 feet; Heighth, 4 feet 6 inches; Girt, 8 feet. Weight of the four quarters, 92 ftone 4 lib. —*April* 20.

*Liverpool*

*Liverpool Meteorology*, 1802.

| | *Depth of Rain as measured by a Pluviameter.* | | | *Evaporation of Water out of a veſſel 4 inches diameter, out of the reach of Solar rays, or influence of any culinary fires.* | | REMARKS. |
|---|---|---|---|---|---|---|
| | Inches. | Decim. | | Inches. | Decim. | |
| January | 3 | 0 | — | 1 | 35 | 21ſt, Conjunction of Jupiter and the Moon.—A great hurricane. |
| February | 2 | 75 | — | 0 | 75 | |
| March | 0 | 75 | — | 1 | 2 | |
| April | 2 | 25 | — | 1 | 65 | |
| May | 1 | 64 | — | 3 | 27 | 16th, Superior conjunction of Jupiter and Saturn, whoſe influence will extend for 19 years.—Rain 21 days. |
| June | 2 | 5 | — | 2 | 88 | |
| July | 6 | 1 | — | 2 | 42 | |
| Auguſt | 3 | 5 | — | 2 | 25 | |
| September | 1 | 75 | — | 2 | 0 | |
| October | 4 | 9 | — | 1 | 65 | |
| November | 1 | 7 | — | 0 | 85 | |
| December | 2 | 7 | — | 1 | 0 | |
| Total | 33 | 54 | — | 21 | 27 | as marked by G. I. Liverpool. |
| | 21 | 27 | — | — | — | |
| | 12 | 27 | Dec. more rain. | | | |

*Liverpool Meteorogical Obſervations, &c. in January* 1803.

This month began with much rain, the hydrometer ſtanding at 14.44 decimal parts, which ſhewed the moiſture of the atmoſphere; Wind S. E.; afterwards clear pleaſant weather.—5th, Changeable.—9th, Gentle ſhowers, with high wind, ſucceeded by a hard froſt, which contined till the 17th, when a thaw commenced with ſnow. Changeable.—21ſt, Fair and cloudy, rain, froſt, and ſnow.—30th, Thick fog, cloudy, and fair; wind ſcarcely varying from about S. E.; 25th, at N. N. E.—Rain 13 days.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Rain, | 1 | 95 | Evaporation, | 1 | 25 |

*February* 1803.

1ſt, Little rain, and high wind, N. N. E.; very changeable, with ſnow intermitting.—13th, Lofty winds began to blow, with driving ſhowers.—18th, Fair, and much ſun.—23d, Windy weather, wth mi and rain to the end.—Rain or ſnow 20 days.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Rain, | 1 | 8 | Evaporation, | 1 | 4 |

*March*

*March* 1803.

Much rain, high wind.—3d, Fair and cold; ſtill windy; froſt.—13th, Rain, cloudy, and more fair.—24th, Hawthorn foliates; windy.—29th, Fair to the end.

By the above we may perceive, according to Dr Kirvan's obſervations, between 1677 and 1789, that when there has been no ſtorm immediately before or after the ſpring equinox, the enſuing ſummer is generally dry; at leaſt five times in ſix.

More or leſs rain or ſnow, 14 days.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Rain, | 1 | 25 | Evaporation, | 1 | 6 |

*Note.*—We thank Mr G. I. for the above communication; and requeſt that obſervations of the like nature may be tranſmitted to us quarterly. If the progreſs of rural operations are included, we will conſider it as an additional favour. N.

## NOTICES TO CORRESPONDENTS.

We will thank the Gentleman who ſent the paper on the Inoculation of Sheep, for a ſight of the *Literary Journal* he mentions. The ſpeculation is ingenious; and, if ſupported by the authority quoted, will be ſubmitted to the conſideration of our Readers.

We are obliged to *Amicus Scotiæ* for his ſuggeſtions. Whether all the Honourable Characters, mentioned by him, can, with propriety, be ranked in the liſt of Scotch Improvers, is a doubtful point; but we will with pleaſure preſent accounts, or memoirs of ſome of them, if materials can be collected.

An Eſſay *on the method of Land-draining adopted in the Counties of Eſſex, Suffolk, and Herts*, has been received, but too late for this number. An *Outline of the Chineſe Husbandry* is under the ſame predicament.

A South Country Farmer's *Obſervations on Shell-marl as a manure*, ſhall appear in our next; together with *Remarks on the culture of Maſſes*.

We are always extremely happy to hear from our good friend S. E.; this gentleman being the firſt volunteer who joined our ſtandard, when we beat up for recruits, and therefore entitled to our particular attention. His laſt communication ſhall appear with all convenient ſpeed.

A variety of Eſſays and other papers have been received, which want of room prevents us from particularizing; but our Correſpondents may be ſatisfied that ſuitable care will be beſtowed upon their reſpective favours.

The letter from our Iriſh correſpondent, together with Inverneſs and Roſſ-ſhire Reports, and the Glaſgow letter of intelligence, were too late of coming to hand, which we much lament, as they contain important information.

*No. XV. will be publiſhed Monday 1ſt of Auguſt* 1803.

THE

# FARMER'S MAGAZINE:

MONDAY, 1. AUGUST 1803.

(No. XV.)

## BRANCH I.

### ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Cursory Reflections on the Means of preventing Emigration from the Highlands.*

SIR,

I OBSERVE in your last Number, a very pertinent question put by that worthy gentleman, Mr Dempster, relative to emigration from the Highlands of this country; also, the correspondence betwixt him and Sir John Sinclair, Baronet, concerning the enlargement of farms, which is certainly connected with the question alluded to. Although I by no means consider myself as fully up to all the causes which have produced emigration, consequently imperfectly qualified for pointing out the best means of preventing it; yet, in the event of nothing better being sent, I request that the following cursory reflections may be submitted, as early as possible, to the consideration of your readers.

The Highlands of Scotland, like all other uncultivated districts where manufactures are not introduced, must necessarily possess a superfluous population, and, even in the ordinary course of affairs, be obliged to throw off periodically a certain proportion of that superfluity, in order that the inhabitants who remain may enjoy the means of subsistence. This, in fact, has happened for a long time past, without attracting much notice, because the operation took place in a gradual and silent manner: but since the complete abrogation of the feudal system, and the

introduction of the new huſbandry, emigration has prevailed on a greater ſcale. It has not been confined to a few individuals, but extended, in many caſes, to whole clans or bodies of people; and, under exiſting circumſtances, probably will not ceaſe, till the country is, in a great meaſure, ſtocked with a new race of inhabitants. I know of no particular meaſures taken by proprietors to obviate or leſſen the certain conſequences of the new ſyſtem, except thoſe attempted by Sir John Sinclair, in Caithneſs, which, I believe, have been tolerably ſucceſsful; though it is the bounden duty of ſuch as are the immediate cauſe of emigration, to take every proper ſtep to prevent it, and provide for the diſplaced inhabitants. I put no blame upon proprietors for introducing the new huſbandry, ſeeing that their intereſt, and perhaps that of the public itſelf, is ſo much benefited by the introduction; but I am not ſure whether they are not reprehenſible in neglecting to deviſe means for the employment of the people removed in conſequence of the change of huſbandry brought about. The comfort, welfare, and happineſs of thoſe thus thrown upon the wide world, in an unprovided ſtate, are not trifling circumſtances; and though I acknowledge the difficulty of forming new habits of life among perſons of mature age, or of rendering a people induſtrious whoſe natural diſpoſitions may have a different tendency, yet aſſuredly the buſineſs is of ſuch importance as at leaſt to merit a trial. To provide accommodation and employment for the Aborigines of the country, who are obliged to ſhift their quarters by a partial or general introduction of ſheep huſbandry, is an important object; and to ſuggeſt ſomething of this nature, is the cauſe of my troubling you with this communication.

As the ground-work of my reaſoning, I ſhall aſſume a hypothetical caſe, though it is in a great meaſure founded upon what is going to take place in a diſtrict where the old ſyſtem has hitherto been chiefly prevalent. It is hardly neceſſary to ſtate, that the baſis of the old ſyſtem is, to keep the land in farms of comparatively ſmall ſize, which are uſually employed in the breeding of cattle, a ſmall part being devoted to tillage for a ſupply of winter fodder. Under theſe circumſtances, the tenantry, generally ſpeaking, are poor, conſequently unable to make improvements; they are wretchedly accommodated, being, in few inſtances, ſo well lodged as the ordinary labourers of the ſouthern diſtricts; they are unprovided with capital ſtock, for taking a part under the new ſyſtem, which makes their removal a conſequence of its introduction. Their poverty, numbers, and idleneſs, prevent rents from being any thing like what can be got with facility from tenants of a different deſcription: hence, ſo long as ſheep huſbandry is ſuch a profitable concern, it may be expected

expected that the old Highland ſyſtem will continue to be gradually given up; and, did not reaſons, not in the leaſt connected with agriculture, influence many proprietors, it is evident that as faſt as leaſes ended, it would be utterly forſaken.

The new huſbandry conſiſts in devoting the ground to the paſturage of ſheep; under which, it has been ſufficiently aſcertained, that much more rent may be gained by proprietors, ſheep being better calculated than cattle for exploring high and upland ſituations, and will thrive, where the other would ſtarve. Sheep farms muſt neceſſarily be of conſiderable ſize; which, of courſe, at all events, leſſens the number of farmers. Beſides, in few inſtances are the old poſſeſſors qualified for carrying on this huſbandry: their ſtocks are inferior to what is required for extenſive undertakings; and this cauſes an importation of new tenants, and even ſervants, into the diſtricts ſo circumſtanced. Attempts have been made to combine various ſtocks; but repeated trials have ſhewn, that it was not practically uſeful. In a word, every attempt to manage a townſhip flock has failed, becauſe ſucceſs in farming depends entirely upon individual exertion.

From what is ſaid, it may be hoped that people, unacquainted with the ſtate of the Highlands, will be able to form a tolerable notion of what inevitably takes place when the new huſbandry is introduced. In the caſe which I argue upon hypothetically, I ſhall ſuppoſe that there are 150 families upon the eſtate in queſtion; that each family conſiſts of 5 individuals; that the population altogether amounts to 750; and that 100 families, or 500 of the inhabitants, are dependent upon the land, and will be deprived of ſubſiſtence in the event of the new huſbandry being introduced. Now, while I do not attach a particle of blame to the proprietor who introduces this huſbandry, ſeeing his intereſt is thereby ſo much promoted, I muſt maintain, that the future lot of the people removed ought to engage his attention; becauſe he is the primary, though innocent, cauſe of their removal. No ſubject whatever calls more loudly for his conſideration. It ſhould occupy his firſt thoughts when he awakes in the morning, and his laſt when he cloſes his eyes at night. In fact, a reſponſibility clings to him, impoſſible to be diſcharged, but by the moſt active exertions.

So far as I have gone, it may be warrantably expected that I will be joined by every perſon, except ſuch as are influenced by the moſt ſordid and ſelfiſh principles: but, whether the ſteps, which I am going to propoſe for leſſening the evils of the new ſyſtem, will be generally viewed as wiſe and practicable, may be ſafely doubted. Every political regulation admits of diſpute, and may be oppoſed on various grounds, by thoſe who conſider

themſelves affected thereby. People of equally good diſpoſitions often ſee the ſame meaſure in different lights; but thoſe who concur with me in eſtimating emigration as a national loſs, or who feel for the wretched ſituation of the Highlanders under exiſting circumſtances, will be diſpoſed to give my ſuggeſtions a candid hearing. I will not take upon me to ſay that the adoption of them would altogether do away every concomitant evil; but ſure I am, that, in many caſes, the welfare of the great body of the people would be materially promoted. Inſtead of being reduced to the neceſſity of emigrating to foreign lands, they would be provided with habitations at home, if they choſe to remain in the country. While their comfortable accommodation is not neglected, the intereſt of the State is attended to; the upland diſtricts of the country are placed under a ſyſtem of huſbandry moſt congenial to their natural circumſtances; and the lowland diſtricts are provided with inhabitants, for carrying on manufactures, or for executing agricultural improvements. To ſuggeſt the meaſures neceſſary to be taken, ſhall now be my object.

Whenever it is determined to introduce the new huſbandry into a Highland diſtrict, the moſt ſpeedy means ſhould be uſed to acquaint the preſent poſſeſſors of the change that is intended, in order that they may have full time for looking out for new ſituations. It ſeems alſo proper, that a complete liſt of the population ſhould inſtantly be made up, diſtinguiſhing the ages, ſexes, and occupations of the ſeveral inhabitants, which will, at one glance, ſhow the number of people that muſt be thrown out of employment, and ſerve to regulate all the after proceedings. Theſe preliminary ſteps being taken, the firſt meaſure that calls for conſideration is the erection of a ſmall village in a centrical part of the eſtate, or more, if the property is extenſive, where ſuch as chooſe to remain within the bounds, or who could procure employment as tradeſmen, labourers, or manufacturers, might be ſecured in a habitation. In the preſent ſtate of the Highlands, thoſe claſſes who compoſe the great bulk of population in many other diſtricts are hardly known; each head of a family is a kind of maſter within his own territories, and manages his little rural matters ſolely with the aid of his wife and children. He is a kind of Jack-of-all-trades, becauſe the extent of labour to be performed will not allow a diviſion thereof to be made; but, under the new ſyſtem, the baſis of which is an enlargement of farms, a ſtore of labour will be created, and much employment afforded for tradeſmen and labourers of every deſcription. The increaſed opulency of the tenantry will cauſe various improvements to be executed. Draining and encloſing may be ſuppoſed then to go briſkly forward; and, at all events, more labour

labour will be furniſhed than was actually executed under the operation of the ancient ſyſtem.

One thing here deſerves notice, which is, the antipathy hitherto diſplayed by the old poſſeſſors againſt the new ſettlers, and their obſtinate refuſal to work upon farms where they formerly conſidered themſelves as maſters. This is certainly a difficulty of a ſerious nature, but might perhaps be overcome, were proprietors ſeriouſly to ſhow that they had the real welfare and comfort of the inhabitants at heart. Were ſuch immediately provided with comfortable habitations, inſtead of having to take up with the diſmal huts and ſhealings of the country; were they ſecured, for a few years, of a certain number of days work in each year, or provided with a fixed quantity of oat meal and potatoes, till the new ſyſtem came fully into action; I am almoſt convinced that a number of people, equal to what is wanted, would cheerfully remain in the country, and that the averſion to the new poſſeſſors would gradually die away. Prejudices are not to be forcibly combated; indeed, ſucceſs never accompanied ſuch an attempt; but, by exerting wiſdom and prudence, they will be much abated. Convince the people, not by words, but by actions, that their ſituation will be meliorated, and every cauſe of oppoſition ceaſes.

I have already ſuppoſed, under the hypothetical caſe which I argue upon, that 100 families, conſiſting of 500 ſouls, will be diſpoſſeſſed by the introduction of the new huſbandry, and I think it very probable that the one half of theſe might be accommodated upon the eſtate, were ſuch ſteps taken as I have above pointed out. In erecting the village or villages (as perhaps more than one might be neceſſary), every perſon who was able to build a houſe at his own expence ſhould receive a long leaſe of the ſame, paying only a trifling ſum annually as ground-rent for it, and a garden annexed. Were an acre or two of ground, at a low rent, alſo annexed to each houſe, and to accompany the poſſeſſion in all time coming, much benefit would be thence derived. But, in the event of the old inhabitants being unable to erect houſes for themſelves, ſuch a buſineſs ſhould at once be taken up by the proprietor, whoſe intereſt and character is ſo deeply concerned. I certainly do not exceed probability, when I calculate upon one half of the number being able to erect houſes on their own account; and, to provide for the remainder, 500l. would be ſufficient, allowing 15l. for each houſe, and 5l. for fencing the garden, &c. This outlay would be a permanent melioration of the property, which, in the caſe of an entailed eſtate, could be regiſtered, and made effectual againſt the heirs at an after period.

I believe Sir John Sinclair has adopted a plan ſomething ſimilar to the above, with the ſmall tenants that were removed from his Langwell eſtate. He has, however, if I am not miſinformed, given them a greater extent of ground to cultivate than is here recommended; but it may be doubted whether ſuch people are fitted for bringing in and cultivating land that preſently appears to be in a waſte ſtate. I have pointed out ſuch a quantity as may be ſufficient for labourers and tradeſmen; a quantity, which might be cultivated at their leiſure hours, without materially infringing upon their ſtated time of labour. My object is, not to make them ſmall farmers (for this would not prove beneficial on either ſide), but merely to place them comfortably in a village as labourers or artiſans. In this way, I am convinced, their ſituation would be rendered more happy and agreeable, than if a more extended allotment was given them.

Still ſomething remains to be done with people ſo circumſtanced, till the wheel goes round, till the new ſyſtem comes fully into action, till employment gets into a regular channel; and this can only be accompliſhed by the proprietor. Let him undertake to provide them in work for a given time; ſay, four months in the firſt year, three months in the ſecond year, two months in the third year, and one month in the fourth, if required; and it may be preſumed, that, before theſe periods are elapſed, the affairs of the eſtate will be placed upon a ſtable footing, and aſſiſtance become unneceſſary. If it is deemed more eligible to give an allowance of meal and potatoes, during the above mentioned years, perhaps the ſame object will be reached. Were two bolls of meal and two of potatoes given to each family for the firſt year, and to be diminiſhed according to the ſcale already ſtated, in the ſecond, third, and fourth years, a moſt important benefit would be gained, at an expence comparatively trifling.

That ſome plan or other, calculated to provide for the accommodation and ſupport of thoſe who are diſpoſſeſſed, is neceſſary, I ſhould ſuppoſe, muſt be evident to the moſt ſuperficial obſerver. If any perſon, however, ſhall be diſpoſed to queſtion the neceſſity of a further meaſure, I beg the circumſtances, which accompany a general diſpoſſeſſion, may be ſeriouſly conſidered. The wretched inhabitants are all at once deprived of the uſual means of living, often obliged to remove from their houſes, without the ſlighteſt attention being uſed to provide employment by which they can ſubſiſt, or houſes in which they can be ſheltered. It need not then excite wonder, that, under the influence of diſcontent and deſpair, they are tempted to leave the country, and ſeek the neceſſaries or comforts of life in a foreign land. To emigrate

to

to the Lowland diſtricts in a body, is not, in many caſes, practicable. Individuals may, and often have done it ſucceſsfully; but a number of families of children cannot be ſo eaſily removed, nor can accommodations be got, unleſs previous means are employed to procure a ſettlement. This brings me to the ſecond meaſure which I mean to ſubmit to the conſideration of Highland proprietors, as calculated to provide for the people removed, and to prevent them from leaving their native country.

Under the ſuppoſition, that one half of the families diſpoſſeſſed, when the new huſbandry is introduced, can be accommodated upon the eſtate in the character of labourers and artiſans, it is obvious, that the remainder muſt either emigrate to foreign countries, or to the Lowland diſtricts. To prevent the former, is a concern of material importance, and may be accompliſhed at a trifling expence, without impoſing reſtraints upon the liberty of individuals, and without ſubjecting proprietors to much trouble or inconvenience.

In all the Eaſtern diſtricts of the iſland, from the Thames to the Moray Frith, the extent of population is leſs than what is required for the purpoſes of trade and cultivation; hence, it is not only difficult to procure people for carrying on extraordinary undertakings, but wages are alſo increaſed, of late, out of all common bounds. The increaſing proſperity of theſe diſtricts will cauſe a ſtill greater demand for labouring people, and produce a further riſe upon their payments, which might be avoided by receiving thoſe who are deſtitute of employment in the Highlands. This has actually happened in many places already; but no regular plan being formed for their reception, when large bodies are turned out of poſſeſſion, the evil on the one ſide has only been partially leſſened, and the benefit on the other only partially gained. Were proprietors, who make a change in the rural ſyſtem of their eſtates, after aſcertaining the preciſe number of people that continued unprovided at home, to ſeek out employment for them in the Eaſtern diſtricts, where population is confeſſedly below what exiſting circumſtances require, I am morally certain, that every one who choſe to work would inſtantly be received with open arms. The ſhorteſt and moſt effectual way of reaching this beneficial end, would be, to advertiſe in the public papers, the number of people to be removed, their ages, ſexes, and the kind of employment each is qualified for undertaking, ſo as a correſpondence might be opened betwixt the parties, in which the proprietor ought to take an active hand. I am for leaving every part of the tranſaction to the free will of the people, and avoiding all things that might ſeem to infringe upon their natural liberty; but, ſure I am, that

very few, who could be thus comfortably accommodated at home, would fly to foreign lands, where difficulties of great magnitude muſt, in the beſt view of the buſineſs, be unavoidably encountered.

According to this plan, a ſmall ſum of money would be neceſſary for each family, in order that the expences of their journey might be defrayed, and furniture provided for their new habitations. To carry off their old furniture, would be an impracticable affair, and perhaps it would be ſold much below its real value; of courſe, ſome aſſiſtance is neceſſary to enſure their comfortable ſettlement. The ſum, however, required for attaining this object, would be nothing at all, when placed oppoſite to the immenſe benefit that might be gained to the public and individuals by ſuch removals. Were even Government to grant ten thouſand pounds *per annum* for their aſſiſtance, I venture to ſay that the object might be effectually accompliſhed.

Thus, I have offered a few curſory reflections upon a ſubject which, of late, has greatly attracted the public notice; and when the motive which dictated them is conſidered, I truſt they will experience a candid and impartial conſideration. I blame no perſon whatever, and allow that proprietors are fairly entitled to make the moſt of their property; though I muſt repeat, that the future welfare and proſperity of the old inhabitants, affected by arrangements, perhaps neceſſary before the full value of that property can be gained, are matters which ought to be attended to. I have pointed out two ways in which this may be done: 1. By providing houſes and employment on each eſtate for as many of the diſpoſſeſſed inhabitants as poſſible. 2. To uſe proper means for ſettling the remainder in the Eaſtern diſtricts of the kingdom, where the ſcale of population is lower than ſatisfies the demand for labour. As the proprietors are the primary, though I confeſs innocent, cauſe of removals, I conſider it as a duty incumbent upon them to be the active agents for putting ſuch regulations in execution; becauſe it is only by the adoption of ſuch meaſures, that the inhabitants can be prevented from emigrating to foreign lands.

Before I am done, allow me juſt to notice the proceedings of the Highland Society on the ſubject of Emigration, as detailed in the ſecond volume of their Tranſactions. That reſpectable body recommend improvement of the fiſheries, the eſtabliſhment of the ſimpler kinds of manufactures, and the opening of communication through theſe remote diſtricts by roads, bridges, and canals. But, with ſubmiſſion, I think it highly probable, that, were even every one of theſe recommendations inſtantly acted upon in the moſt vigorous manner, none of the wiſhed for effects

would

would operate ſo as to prevent emigration in our day. No doubt, roads, bridges, and canals, may ſpeedily be executed, by granting a ſuitable ſupply of money; but the Highlands may be emptied of the Celtic race before fiſheries and manufactures are eſtabliſhed upon a permanent footing. I entertain a better opinion of the meaſures ſuggeſted by them to Government for regulating the conveyance and accommodation of thoſe who emigrate. They are dictated by humanity, and will, I truſt, be ſanctioned by legiſlative authority; though it does not ſtrike me, that the beſt way to prevent emigration is by ſecuring a comfortable paſſage to the emigrants.

It gave me ſome ſurpriſe to learn, from a gentleman well acquainted with the Highlands, that a chief cauſe of recent emigration proceeded from diſſatisfaction entertained by the inhabitants againſt the eſ[illegible]ished clergy, raiſed and foſtered by itinerant preachers; but, on this head, I believe, no alarm need take place; for if the people were temporarily happy, they would be under no neceſſity of emigrating to America for ſpiritual comfort. Emigration, on a large ſcale, commenced in 1772, becauſe a conſiderable riſe of rent then took place in ſeveral Highland diſtricts. The American war ſtopped it for a time; at leaſt, it changed the dreſs of thoſe who emigrated. After the peace of 1783, emigration again revived, and continued to 1792, when the war found a vent for the ſuperfluous population. During the nine years that war raged, it is believed more people were taken from the Highlands, than in any former period of the like duration; and the very ſhort peace that followed, furniſhed proofs of the remaining population being greater than the country was capable of ſupporting. But an emigration of this nature, is not what I mean to counteract. My ideas are, that ſuch ſhould be left to take its natural courſe, as it will ſcarcely ever exceed the proper bounds. The object which I have in view is, to provide for thoſe turned out, when the new huſbandry is introduced, this being a forcible meaſure, and cauſing the people to emigrate at all events. Thoſe who view emigration as an evil, and feel for the wretched ſituation of the Highlanders, will concur with me in thinking, that proprietors, in all caſes where the inhabitants are diſpoſſeſſed in conſequence of new rural arrangements, ought to ſtrain every nerve in procuring accommodation and employment at home for thoſe who are turned out. On the contrary, thoſe who view the buſineſs in another light, who conſider it as a proof of the increaſed proſperity of the country, or who judge that the ſcale of population is ſufficient for every national purpoſe, will be of different ſentiments. If actuated by philanthropy, they may recommend a comfortable

tranſport

tranſport of the emigrants, and be anxious that the ſame care is taken of them in the paſſage, as is done with the African negroes; but *real* remedial and preventive means to keep the people at home, by furniſhing them with houſes and employment, will hardly gain their countenance. The number of ſuch people, however, I hope, is not great; and I indulge the pleaſant reflection, that ſome ſcheme or other will be deviſed for meliorating the condition of the Highlanders, and providing for thoſe who are removed from their native homes by an introduction of the new huſbandry into the Highland diſtricts. I am,

Yours, &c.

A RURAL ECONOMIST.

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[The following paper was communicated by Sir John Sinclair Baronet, to whom this Work has repeatedly been under great obligations. We are, however, extremely ſorry that, on this occaſion, our limits reſtrain us from preſenting more than the ſubſtance of ſuch an important communication.]

FOR THE FARMER'S MAGAZINE.

*Subſtance of a Paper ſubmitted to the Conſideration of the Select Committee, to whom the Survey and Report of the Coaſts and Central Highlands of Scotland, made by the command of the Commiſſioners of His Majeſty's Treaſury, has been referred.*

THE ſubject that has been referred to the Committee, is unqueſtionably one of the moſt important that could be ſubmitted to the conſideration of any body of men. About two hundred years have now elapſed, ſince the Britiſh Government has almoſt excluſively directed its attention to the cultivation of its foreign poſſeſſions, leaving the improvement of its territory at home to the exertions of individuals. The adoption of ſuch a plan might be juſtified, if every acre in the united kingdom were cultivated to the beſt advantage; but ſurely, until that is the caſe, we ſhould not be raſh in waſting abroad, what can be employed at home to much more advantage.

It is unneceſſary, at this time, to dwell on the fatal conſequences which this country has experienced from Foreign Colonization, *carried to the extent it was*. It appears that our American Colonies alone coſt us above 40 millions, in addition to all the expences of the various wars connected with thoſe eſtabliſhments,

eſtabliſhments, which amounted to above 200 millions more. What happy effects might not have been expected, had only a ſmall proportion of thoſe ſums been dedicated to domeſtic improvement?

Lord Bacon, whoſe works throw as much light on politics as on philoſophy, in a work entitled, 'Certain Conſiderations touching the Plantation in Ireland,' or the new ſettlements begun in that country, written in the reign of James I, thus ſtates his opinion regarding the means of promoting domeſtic colonoziation.

'I will never deſpair but that the Parliament of England, if it may perceive that this action is not a flaſh, but a ſolid and ſettled purſuit, will give aid to a work ſo religious, ſo politic, and ſo profitable. And the diſtribution of charge (if it be obſerved) falleth naturally into three kinds of charge; and every of thoſe charges reſpectively ought to have its proper fountain and iſſue: for as there proceedeth from your Majeſty's royal bounty and munificence, the gift of the land, and the other materials, together with the endowment of liberties; and as the charge which is private, as building of houſes, ſtocking of grounds, victual, and the like, is to reſt upon the particular undertakers; ſo, whatever is public, as building of churches, walling of towns, town-houſes, bridges, and cauſeways, or highways and the like, ought not ſo properly to lie upon particular perſons, but to come from the public eſtate of this kingdom, *to which this work is like to return ſo great an addition of glory, ſtrength, and commodity.*' *

The principles which Lord Bacon thus eſtabliſhed, were actually carried into effect by the celebrated Frederick of Pruſſia, who, fortunately for his kingdom, having no diſtant poſſeſſions to attend to, was led to dedicate his active mind to domeſtic improvements, promoting the cultivation of waſtes, the introduction of new ſettlers from foreign countries, (inſtead of permitting emigrations from his own), the building of cottages, the draining of marſhes, the forming of canals, the diviſion of commons, (for the encouragement of which premiums were given), and other objects of a ſimilar nature. The ſum he annually laid out for thoſe purpoſes, (a particular detail of which will be found in Count Hertzberg's works), was very conſiderable for the narrow reſources of his kingdom, amounting to no leſs a ſum than 300,000l. ſterling *per annum*; but inſtead of being impoveriſhed by ſuch liberal grants, he thereby increaſed his revenue ſo much as to leave behind him a treaſure in ſpecie, to

* See his works in folio, Vol. iv. p. 406.

to the amount of about twelve millions ſterling. What might not then be effected in this country, were ſimilar meaſures to be purſued?

The Northern part of Scotland, to which the Report referred to the Committee principally relates, poſſeſſes within itſelf various reſources, which may render it one of the moſt valuable poſſeſſions belonging to the Britiſh crown.

Though (except along the coaſt) it is in general unfit for agricultural operations, yet it produces a ſuperior breed of cattle; and, it has lately been aſcertained, might maintain a fine-wooled breed of ſheep. The hills alſo are full of mines and minerals of the moſt valuable ſorts, and the ſea-coaſts abound with fiſh of the greateſt variety and value.

The number of inhabitants in the Northern Highlands may be calculated at above two hundred thouſand ſouls. But as in thoſe mountainous diſtricts, more eſpecially ſince inoculation has been introduced, population increaſes as faſt as in North America, unleſs new means of occupying the people, are from time to time pointed out, perpetual emigrations muſt be the neceſſary conſequence.

For the purpoſe of furniſhing ſuch employment, the Report referred to the Committee very properly ſuggeſts, 1. Roads; 2. Bridges; 3. Harbours; 4. Naval Stations; and 5. Canals. Some obſervations on theſe, ſhall be ſubmitted to the reader's conſideration.

*Roads.*—The moſt important means of improvement certainly is roads of communication, as that is the foundation on which the whole ſyſtem muſt depend. That there ought to be a road from one extremity of the iſland to the other, with branches diverging from the main road, where neceſſary, is eſſential in various points of view, as, 1. For the purpoſe of communication with the ſeat of government; 2. For the eaſier conveyance by poſt of commercial intelligence; and, 3. That the cattle and ſheep reared in thoſe remote diſtricts, may be conveyed with the greater eaſe and ſafety to the more fertile counties, where they are prepared for conſumption. The roads alluded to in Mr Telford's Report, are ſo eſſential for thoſe purpoſes, that this part of the plan does not require any particular explanation. It is to be obſerved, that the diſtricts through which thoſe roads are to be conducted, though unable to make any great exertion, yet would moſt readily contribute what they could, to promote ſo important an object.

*Bridges.*—It is well known, that no roads can be complete without bridges, and that they are particularly neceſſary in a country, where even the ſmalleſt ſtreams are apt to be unexpectedly ſwelled into torrents, and ſoon become dangerous to the traveller,

traveller. No bridges can be more eſſential than thoſe mentioned by Mr Telford; and the ſum which it is propoſed the public ſhall contribute for their erection, is not likely to be objected to.

*Harbours.*—If the ſafety of commerce, or the improvement of the fiſheries, are objects worth attending to in thoſe remote diſtricts, it is evident that they cannot be obtained without the advantage of harbours. The advantages to be derived from the harbours recommended in Mr Telford's two Reports, can hardly be queſtioned, both with a view to the fiſheries, and to the general commerce of the country. In regard to the propoſed harbour at Wick, in particular, *it is in fact a national object*; for it would furniſh ſhelter, not only to the coaſting trade, but to the foreign commerce of the kingdom. Within theſe few years paſt, about 30 veſſels have been wrecked upon that coaſt, the greater part of whom, and their valuable cargoes, would probably have been ſaved, had there been a harbour there.

*Canals.*—For many years paſt, the idea of cutting a canal from Fort-William to Inverneſs, has been recommended to the public attention, and is at laſt ſubmitted to the conſideration of Parliament. As that ſubject is ſo fully explained in the Report, it ſeems unneceſſary to dwell more upon it in theſe curſory obſervations.

Such are the means of improvement recommended in theſe Reports. Let us next conſider, 1. The expence which the plan will occaſion; 2. The advantages that may be derived from it; and, 3. What would be the beſt mode of carrying it into effect.

*The Expence.*—1. It is propoſed in the Report, that a ſum not exceeding 96,000l. ſhall be granted by the public, for certain roads and bridges in the northern parts of Scotland, and that a ſimilar ſum ſhall be paid by the land-owners of thoſe diſtricts where they are to be made. The general principle of this propoſal certainly cannot be objected to: but it is ſubmitted whether the proportions to be expected from the land-owners ought not to vary, according to ſituation and circumſtances. It cannot be ſuppoſed, that diſtricts hitherto inacceſſible, can afford as much as thoſe which have already been enriched by commerce and intercourſe; and if this is admitted, any difference of contribution that may ariſe in conſequence thereof, might be defrayed out of the fund ariſing from the balance of the forfeited eſtates, which was originally ſpecially appropriated for the improvement of that part of the kingdom.

2. The expence of the harbours for the improvement of the fiſheries, is ſtated at 60001.; but that ſum is certainly inadequate for ſo important an object. It is a fortunate circumſtance, that the property of a tract of country, where an admirable harbour may

may be formed, peculiarly adapted as a central point for carrying on the deep-ſea herring fiſhery, has lately been acquired by that public-ſpirited Society conſtituted for the ſpecial purpoſe of improving the Britiſh Fiſheries. The Society is certainly well diſpoſed to make every poſſible effort which its moderate capital will admit of, to promote ſo uſeful an undertaking; but it is to be conſidered, that it has a new ſettlement entirely to create; that the harbour of Wick is not only of importance to that neighbourhood, but may afford ſhelter and protection to a number of veſſels employed, both in the coaſting trade, and in foreign commerce; and, in fact, that it lays a foundation for eſtabliſhing the deep-ſea herring fiſhery, from which this country would derive more profit and naval ſtrength, than from almoſt any new undertaking to which its attention can be directed.

3. The expence of the propoſed Naval Stations, amounting only to 60,000l, 27,500l. of which it is propoſed ſhall be raiſed by private ſubſcription, does not ſeem to require any further explanation, than what is contained in the Report.

4. The Caledonian Canal is undoubtedly a great national object; and I have no doubt, if peace had continued for ſome years, that numbers of perſons would have readily taken a concern in it, as a fair mercantile ſpeculation. At preſent, it can only be executed by the public; and, when completed, the nation would not only be indemnified for the expence, by the advantages of which it would be productive; but if it anſwered the objects in view, of ſhortening and rendering ſafer and more commodious the communication between the eaſtern and the weſtern coaſts of the iſland, it would yield a conſiderable ſurplus income to the exchequer.

If the public were, in the courſe of ſeven years, to be at the whole expence that is above ſuggeſted, amounting in all to 301,450l.; what is it, compared to the benefits which may be expected from that expenditure? Is it poſſible to ſuppoſe, that the nation, either directly or indirectly, would not be benefited, even in a financial point of view, to a much greater extent than the intereſt of the ſum expended, namely, 25,000l. *per annum?* But when it is conſidered, that, at ſo moderate an expence, the commerce of the country will be facilitated; that many thouſands of induſtrious or uſeful inhabitants will be prevented from abandoning their native country; and that the foundation of improvement will be laid in many extenſive and valuable diſtricts; who can refuſe giving every poſſible aid to meaſures, of a nature ſo peculiarly beneficial and important?

*Advantages*

*Advantages which the Country may obtain were the propoſed Meaſures carried into effect.*

There is nothing from which this country would probably be enabled to draw more ſubſtantial benefit, than to be enabled to make a fair compariſon between foreign and domeſtic coloniza-tion, in regard to all the leading points of political importance; as, population, agriculture, commerce, manufactures, and naval ſtrength.

1. *Population.*—As to population, there can be no compariſon between the two ſyſtems. The people you have at home, you have them always at your own command, and they muſt furniſh you either with men or money, or with both; whereas the inhabitants of a diſtant colony, may have a jealouſy of the mother-country, or may wiſh to become independent, or may join your moſt inveterate enemies, or may be conquered by them. The population of a domeſtic colony, therefore, produces ſtrength; that of a remote one engenders weakneſs, and becomes the ſource of debility.

2. *Agriculture.*—It is evident alſo, that ſuch encouragements as thoſe above ſuggeſted, may greatly promote the agriculture of a country, and may contribute to render it independent of foreign nations for grain. Though the northern parts of Scotland are in general far from fertile, yet the new modes of improving waſtes, which have been lately introduced there, are likely ſoon to alter the whole face of the country, and may poſſibly, in time, enable it to furniſh thoſe inferior qualities of grain, as oats and rye, which we have hitherto been obliged to import, in ſuch quantities, and at ſuch an expence, from foreign nations. Without, however, roads of communication, to carry on and to promote the internal improvement of thoſe diſtricts, and harbours to import lime, and to export the produce that has been raiſed, agricultural improvements, to any great extent, cannot be expected.

3. *Commerce.*—Nothing is more deſirable for a maritime power, than to extend the navigation and commerce of every part of its dominions. Were the meaſures, above alluded to, carried on, there can be no doubt, that not only the coaſting trade would be improved, but that a very advantageous commerce might be carried on with the Baltic and the Weſt Indies, by which the number of our ſeamen, and the produce of our cuſtoms, would be conſiderably augmented.

4. *Manufactures.*—For the purpoſe of employing thoſe who may not find the means of occupation in agriculture, commerce, or the fiſheries, it would be deſirable to have ſome of the coarſer manu-

manufactures eſtabliſhed in the north, more eſpecially thoſe which we are at preſent obliged to import from foreign countries, as Oſnaburghs, Sileſias, and the like. And if the improvements which are in contemplation were carried on, and ſucceeded to the extent that may be expected, there can be no doubt, that theſe diſtricts would furniſh a new and advantageous market for the manufactures of England; and rival, in that reſpect, thoſe foreign colonies in the principal benefit that can be derived from them.

6. *Naval Strength.*—It is impoſſible, in this ſhort paper, to give any idea of the advantages which might be expected from theſe improvements, in regard to our fiſheries and naval ſtrength. It may be ſufficient to obſerve, that an intelligent individual, the Rev. Herbert Marſh, who made particular inquiries into the ſubject, has given it in evidence before one of the Fiſhery Committees, that the eaſtern coaſt of Caithneſs is the proper ſtation for eſtabliſhing the deep-ſea fiſhery, and rivalling the Dutch in that important branch of induſtry.

*Mode of carrying the Plan into effect.*

The great difficulty regarding meaſures calculated for public improvement, is the mode of carrying them into effect; ſo as to prevent the waſte of public money, and that the objects in view may be obtained. If the plans abovementioned are fortunate enough to obtain the ſanction of Parliament, they muſt, in a great meaſure, be carried on under the direction of the Treaſury. But as it is hardly poſſible for the Treaſury itſelf to attend to the *minutiæ* of ſo many different undertakings, to enter into proper bargains with the land-owners in the different diſtricts, or with the magiſtrates of the different towns, or to ſee that the contracts are fairly executed, it would be proper to refer theſe particulars to the Board of Truſtees for manufactures and other improvements in Scotland, who have hitherto managed the fund entruſted to their care with much prudence and ſucceſs, and who could conduct this additional concern without occaſioning any farther expence to the public. In this way, alſo, a moſt deſirable object may be obtained—that of making ſome progreſs in the courſe of the preſent year, which would be of the utmoſt importance, with a view of checking the ſpirit of emigration. Indeed, the loſs of one year in carrying on any great national undertaking, ought always, if poſſible, to be avoided.

On the whole, it cannot be doubted, if theſe meaſures are purſued with proper ſpirit, that, in the words of Lord Bacon, *they will prove a ſource of glory, ſtrength, and commodity to the empire;*

*pire*; of glory to thoſe under whoſe auſpices ſuch important undertakings may be carried on and completed; and of ſtrength and wealth to a country, whoſe inhabitants are thus enabled to extend their commerce, and to improve their ſoil, and are furniſhed with new means of occupation, induſtry, and ſubſiſtence.

S.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*The Scotch Tithe Syſtem further Illuſtrated.*

SIR,

IN the ſhort hiſtory of Scotch Tithes written for your Magazine, and inſerted in that of February laſt, although I did not propoſe to detail every thing on the ſubject, yet I perceive that ſome further particulars may with propriety be added.

A proprietor of lands in Scotland, who has acquired no right to his tithes, if he deſigns to improve his eſtate, firſt, with propriety, ſues an action before the Commiſſioners of Tithes, for the valuation and purchaſe of the tithes of his farms.

This action is purſued either againſt the Crown, or againſt any other lay inferior titular of the tithes, if they have been gifted by the Crown; and againſt the clergyman of the pariſh.

By obtaining a valuation of tithes, a proprietor renders himſelf ſecure that he ſhall never after be obliged to pay any tithes for his improvements. By paying the titular nine years purchaſe of the valued tithe-duty, he is ſecure, that, in caſe of any future augmentations of the miniſter's ſtipend, by authority of the Court, for rendering the living more reſpectable, he ſhall pay no more for his property than his rateable proportion with the titular of the tithes of the pariſh.

By act of Parliament 1693, however, the tithes which had belonged to the Scotch biſhops, then fallen to the Crown by the abolition of Epiſcopacy in Scotland, were declared not ſubject to ſale, as long as they remained with the Crown; and they are chargeable for ſtipend only in caſe of all the other tithes of the pariſh being exhauſted. They may, nevertheleſs, be valued, and are not drawn in kind; a practice which, in Scotland, has ever been accounted oppreſſive.

It may be alſo further remarked, that in explaining what the conſtant rent of any lands is by which the tithe falls to be valued, the following rules are obſerved. The rents of quarries,

minerals, moſſes, inns, mills, orchards, &c. are deducted from the rent-roll of the lands. Alſo, if an improvement of rent has been recently made at an uncommon expence, *e. g.* by draining a lake, the proprietor is allowed a reaſonable abatement on that account.

A. S.

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NOTE BY THE CONDUCTOR.

It is to be hoped, that our Engliſh readers, who we underſtand are rather puzzled to make out the legal polity of Scotland with reſpect to tithes, will now fully comprehend the principles upon which valuations are conducted, and payments made in this country; but, in order that the whole buſineſs may be brought into one point of view, we preſent the following abſtract:

1. All lay tithes may be valued when the owner chooſes to bring an action for that purpoſe: The fifth of the *free* rent is conſidered to be the tithe; but numerous deductions are made from the *real* rent before this is aſcertained.

2. A valuation being made, the owner or payer is entitled to purchaſe the tithes at nine years amount of their annual value. He is, however, ſubject in all time coming to pay a ſhare of ſtipend to the clergyman of the pariſh where the land is ſituated; but this can in no caſe exceed the amount of the valuation; and even the titular or proprietor of the tithes is rated in the ſame proportion for ſuch lands as he poſſeſſes in the pariſh.

3. The valuation ſecures both proprietor and tenant from paying tithe upon improvements. In fact, tithe in Scotland has only been eſtimated according to what may be called the natural value of the ground; and it is only by forced concluſions that the equity or juſtice of drawing tithe upon any other principle can be demonſtrated.

4. The titulars in Scotland, are people of the ſame deſcription as thoſe ſtyled lay impropriators in England. During the interregnum that followed the Reformation, the titulars ſeized upon many of the tithes; and in the reign of James VI. more were granted to them by that facile monarch. A few were preſerved for the biſhops afterwards ordained; and it is only to ſuch tithes as were held by them, and which at the Revolution reverted to the Crown, that the act of 1633 does not apply.

N.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Thoughts on the Effect of Froſt on Growing Corns, &c.*

SIR,

THERE is perhaps no ſubject in agriculture more deſerving of a minute and thorough inveſtigation, than that of the effects of froſt upon growing corn, both as preventing the farther filling of the grain, and rendering it unfit for ſeed. A want of attention to theſe matters, has more than once proved injurious to this country, particularly in the years 1783 and 1800. In the firſt of theſe periods, though the ſummer and harveſt were both very favourable, the crop was more defective than in 1782, a late and unfavourable year, in which the crop was almoſt generally froſted, in the northern diſtricts, ſo early as the month of October. It is alſo evident, that the failure of crop 1800 was more owing to the bad or froſted ſeed uſed, than to all other cauſes put together. Notwithſtanding the goodneſs of grain produced, both in 1783 and 1800, the ſcarcity was very great; and prices, of courſe, roſe higher than in the preceding years, when the crops were really damaged by the lateneſs and unfavourableneſs of the ſeaſons. It may naturally be ſuppoſed, that where the intereſt of ſo many individuals was ſo deeply concerned, the utmoſt care would be beſtowed in inveſtigating what was entirely new. I ſay, new; becauſe froſt had for a long time done no material damage to the ripening crops in this country; conſequently farmers and others had every thing to learn on this ſubject.

As I have not obſerved any thing particular, in your Magazine, upon this important buſineſs, I beg leave to preſent you with my obſervations thereupon; and I aſſure you they are not grounded upon theory, but are ſolely the reſult of facts and experience. I muſt premiſe, that grain, injured by mildew or froſt, cannot, by the uſe of any means, be recovered; therefore, the only point deſerving conſideration is, how, or in what manner, we can diſcover what may be ſafely uſed for ſeed. I ſhall conſider, 1. The ſtate of the weather, wherein danger to the growing crop from froſt may be apprehended. 2. At what ſtages of vegetation, or approaching ripeneſs, the worſt effects may enſue. 3. The expoſures and ſituations, where moſt injury is ſuſtained. 4. Whether oats imperfectly filled or ripened, in conſequence of a late ſeaſon, can be fit for ſeed. 5. The appearances by which froſted or imperfect ſeed may be diſtinguiſhed.

In conſequence of the obſervations I have been enabled to make on theſe intereſting matters, I am clearly of opinion, that no degree

of cold that we are acquainted with in this country, can of itſelf prevent the filling of corn, or render it unfit for ſeed; but it is to be remarked, that if a ſevere froſt ſet in during the night, and continue through the next day, or days, without any abatement, but what is occaſioned by a hot ſun, that the heat through the day, unleſs the dew or rine, left by the froſt at night, has been carried off early in the morning by a breeze of wind acting upon the grain in its unripened ſtate, has ſuch a powerful effect upon the growing, and even the ripening corn, as to prevent its farther filling, and render it totally unfit for ſeed. But, however ſevere the froſt be during the night, if it go off next day without ſunſhine, it does not affect the corn in the ſmalleſt degree. It does not even hurt potato ſtems, * which are much more eaſily injured. For it has been often obſerved, that thoſe, from which the rays of the ſun were obſtructed by the branches of a tree, or by any other intervening object, were perfectly ſafe, while the reſt of the field was entirely deſtroyed. Upon this hypotheſis, therefore, that froſt becomes injurious to corn, only by being ſucceeded by ſunſhine, all the obſervations in the remainder of this Eſſay will ſolely depend.

I may here inquire, in what ſtages of vegetation, or approaching ripeneſs, the worſt effects are to be apprehended? On this point, it may be obſerved, in general, that in none of the ſtages of growth, or approaching ripeneſs, are the crops ſecure from the injuries of ſevere froſt, when attended through the day with clear ſunſhine. But corn in its green or milky ſtate will reſiſt it more than when riper or farther advanced. Experience ſhows, that while oats remain uncut, even though fully ripe, they are not altogether without the reach of damage, at leaſt for ſeed. No injury is ſuſtained in this ſtate, in point of mealing, or for any other purpoſe, but rather the contrary; as, by the froſt, they acquire a whiter and brighter colour; are rendered drier and harder; come ſooner into the ſtackyard, and are leſs apt to heat, than would otherwiſe have been the caſe. Grain, in its progreſſive ſtate of filling, and the farther it advances towards ripeneſs, is ſo much the more apt to be hurt by froſt, which inſtantly checks it from filling any more, and renders it at the ſame time unfit for ſeed. Of this, I had full demonſtration in 1783, having ſown very fine looking oats, well kept, and weighing from 14 to 15 ſtone per boll, a weight almoſt equal to the average of good

* Peas and Potatoes are much eaſier hurt by froſt, than any of the white ſpecies of grain. Any moderate degree of froſt will affect theſe preciſely as above; but a very ſevere froſt will hurt the former, even without clear ſunſhine.

good years; yet ſo defective was the ſeed, that not one, perhaps, out of 500 grains, brought forward a plant to maturity. This inſtant check, however, to the farther filling of the grain, and total deprivation of its vegetative power, is produced only by a froſt that is uncommonly ſevere, and which continues through a clear ſunſhine. But the injuries brought upon the ripening crops by the froſt, affect them in every poſſible degree, in a lower as well as a higher manner, from a ſmall hurt, that renders the ſeed ſomewhat more backward to come on in the beginning of the ſeaſon, from which, however, it ſoon recovers; to another, in conſequence of which, it puſhes out one, two, or three ſmall roots, with great difficulty, and in a long time; the leaf ſmall, puny, and of a very bad colour. In this ſtate, a great proportion of the plants die, eſpecially when the ſeaſon ſets in droughty, or is cold and backward. This was very generally the ſtate of the ſeed in 1800. The ſame thing I have obſerved upon particular fields in other years, though damaged in a leſs degree than in 1783, when the leaf came out, if it did come out at all, without any root; and, of courſe, it rarely got above ground, but all periſhed. That theſe various degrees of damage are ſuſtained in conſequence of froſt, is evident from the following fact, which at firſt appeared to me not a little extraordinary, viz. That making a trial of grain, by putting it under a ſod, or in fertile earth, is not a certain criterion by which we can determine whether it will ſufficiently vegetate or not; becauſe, in this way, it will often give ſatisfaction to moſt people, and yet afterwards turn out but very poorly in the field. In making the ſame experiment with barley, I have found the reſult juſt the contrary; for it will anſwer better in the field, than either in this way or in malting. When oats, in their green or milky ſtate, are overtaken by froſt, and thereby ſtopped from farther growth, they are generally rendered black in the kernel (ſheeling). Of this, we have had many proofs, eſpecially in 1782. When in this ſtate, there can be no deception; for no man would chooſe to uſe ſuch oats for ſeed. But when they are conſiderably advanced in filling and ripening, and feel hard when preſſed in the hand, and at the ſame time acquire a white and bright colour, the deception is then very great; and experience alone can determine us to ſet them aſide.

Having pointed out that ſtate of the weather in which corn will be damaged by froſt; and alſo ſhown, that, in no ſtage of filling, or approaching ripeneſs, is the danger diminiſhed, I ſhall next advert to the expoſure of the fields, and ſhow what ſituations will be firſt, or moſt eaſily affected, and alſo what will longeſt reſiſt the froſt, and of courſe be moſt apt to eſcape.

Low lying fields, which are at the foot of hills or high ground, and hanging to the eaſt, ſouth-eaſt, or ſouth, will often be hurt by froſt, which does not in the leaſt affect the higher grounds, or fields hanging to the north or weſt. Theſe are not affected by fogs or vapours riſing out of marſhy ground, as in the caſe of mildews, but from the heat of the ſun early in the forenoon. Higher lying fields, expoſed to the morning ſun, are the next in order that will ſuffer. That theſe various effects are produced, according to the expoſure and ſituation, will be evident to all who pay any attention to the influence of froſt upon the ſtems or tops of potatoes, which, being more diſcernible from the ſudden change of colour, and happening almoſt every year, can hardly fail to come under the eye of every obſerver.

On the other hand, the fields which will eſcape damage from froſt, or reſiſt it longeſt, are thoſe which lye within two or three miles of the ſea, or at ſuch a diſtance as that the ſea breezes can, in the morning, drive off the froſt, before the heat of the ſun has power to hurt. Of this we have had experience in the worſt of years. The oats, in ſuch places, though deficient in weight, were perfectly fit for ſeed, and had loſt none of their vegetating powers Lands lying to the north or weſt, ſo as that the high ground to the eaſtward defends or obſtructs the rays of the ſun from reaching the crop for a conſiderable time through the day, are the laſt in the inland parts of the country to be damaged, and will often eſcape when all other fields are hurt. In the year 1782, the froſt was ſo ſevere, that ſcarcely any ſituation could protect the crop.* In 1799, the weſt and north lying fields, as above deſcribed, generally came off with very little damage, in compariſon of thoſe lying to the eaſt or ſouth. And in all

* Perhaps it was as much owing to ignorance or want of experience in the people, as to the ſeverity of the froſt that year, that the ſeed proved ſo abortive. The beſt, or earlieſt ripened oats, were ſown without any other inveſtigation; but, except in very early ſituations, none of them were weighty. Thoſe who had none of this kind, rather than ſow their own, bought from others. As the ſeaſon advanced, theſe were found to be the moſt defective. The lateſt and greeneſt of the oats were then ſeen to produce the greateſt number of plants; ſo that it was the general opinion, at all public meetings, that, had they ſown their own, they had done much better. This difference, no doubt, aroſe from the northerly expoſure of the weak oats, while growing, and their reſiſting the froſt in their green ſtate. Their fitneſs for ſeed was not univerſal. I ſowed part from a field hanging very much to the weſt, which anſwered tolerably well. I ſowed a part likewiſe from a field lying to the ſouth: from this there was not one ſtalk produced.

all years when a ſevere froſt ſets in early in the ſeaſon, as was the caſe in both the years above mentioned, the only hope of ſeed is from oats produced on fields either of a weſt or north expoſure. Immediately after a ſevere froſt, and bright ſunſhine ſucceeding, any field of oats affected by it, will be known by the difference of its appearance. It receives a bluiſh, ſpeckled colour, different from what it had before, and alſo from what it would have attained in the courſe of ripening. Should rain fall ſoon after, as it frequently does, and the crop recover its former appearance, remain green, and in a filling ſtate; in that caſe, it has thrown off the froſt, and there remains no danger. But if, after the rain, (if any does fall), it retain the froſted colour, and ripen faſt, it is by no means to be truſted for ſeed. This is the only ſure criterion whereby one can poſitively judge, whether oats that have come under a ſevere froſt are to be fit for ſeed or not. For it may be taken as a certain fact, that whatever degree of froſt puts a ſtop to the farther filling of grain, hurts or deſtroys its vegetating powers, and thereby renders it quite unfit for ſeed.

With regard to oats that are ill filled, or ill ripened, by a late and unfavourable ſeaſon or ſituation, I have obſerved, that they may be uſed for ſeed, and are only rendered unfit, from being overheated in the ſtackyard, or from vegetating before or after reaping, or from froſt. If oats have been overheated in the ſtackyard, whether weak or ſtrong, they muſt thereby be conſiderably hurt, and are of courſe very unſafe to be truſted for ſeed. I know this opinion is different from that of many reſpectable farmers, who do not mind what they call a ſmall heat in the ſtack. But as a ſtack heats very unequally, ſome of it to a great degree, ſome of it leſs, and perhaps ſome part not at all; wherever the heat had gone ſo far as to diſcolour the oats, or any of them, they ought to be rejected for ſeed; and the doing ſo will be juſtified by experience again with regard to ſuch as are vegetated or ſprung before or after reaping. The danger here is more applicable to ſtrong than weak oats. If, on account of warm, rainy weather, in harveſt, a field of oats, fully ripe, be prevented from being cut, even though they be not lodged, they will ſometimes vegetate, and that very generally, though in ſuch a ſmall degree as not to be perceived without very cloſe inſpection. Theſe, if uſed for ſeed, will prove very defective, and the cauſe of their failure may never perhaps be known. Oats vegetating after being cut, as they ſpring farther and more unequally, are eaſily diſcovered, though both the one and the other diſappear upon being fully dried. This, in a warm, rainy harveſt, perhaps requires more attention than is generally imagined. Some part of a crop of oats is found weak, that is, deficient in weight, and not come

to full maturity in almoſt every ſeaſon—in an early as well as in a late year: but, if not hurt by froſt; by having begun to vegetate, or by being heated in the ſtack-yard, they will be found to grow, when uſed in ſeed, juſt in proportion to their ſtrength; that is, they will bring up plants, but not ſo ſtrong and vigorous as thoſe produced by heavier and better oats; yet, if favoured by a good ſeaſon, they may come forward in the end to be a very good crop. They cannot reſiſt bad weather as ſtronger ſeed would do; and require more time on the ground, that is, they are not ripe and ready for the ſickle ſo early as the ſtronger oats; but they are always to be preferred to ſeed, be its weight or ſtrength what it will, that is damaged by froſt, or in any other way whatever. The weakeſt of all the oats known, is the black one, with a ſtrong huſk and a long beard, called in the north of Scotland, ſmall corn. The wild oat is very like this, both in ſize and colour; and both of them reſiſt the froſt beyond all others, there being ſcarcely an inſtance of either of the two being hurt by it ſo much as to be rendered unfit for ſeed. But this is of no great conſequence, as the former are falling into diſuſe; and as to the other, it has ever been the endeavour of every good farmer to extirpate them altogether.

Mildew appears to be the greateſt obſtruction (froſt excepted) in preventing oats from coming to maturity, eſpecially in an early ſeaſon. But this ſeems to alight more upon the ſtem than upon the grain, rendering it incapable of tranſmitting any more ſubſtance or weight into the grain, but not hurting its vegetative power. So that, if it has got ſufficiently far advanced in ripening, a mildew will not render it unfit for ſeed; and if it has not, it will ſtill grow, but proportionably feeble according to its weight. Of this I have had ſufficient proof; having ſown both the one and the other, oftener than once, in the ſame field, in order to aſcertain the difference. Oats ripened very late in a bad ſeaſon, if they have eſcaped damage from froſt, and have been well kept through the winter, are to be judged of preciſely in the ſame manner. Barley that is late in ripening, or is weak or ſilly grain, is never fit for ſeed, whether froſted or not.

The next thing to be conſidered, are appearances by which the diſtinction between good and bad ſeed can be readily aſcertained.

This is no doubt the moſt intereſting and material inquiry of the whole, and to which all the reſt are only ſubſervient. But as I have already pointed out every circumſtance that has come under my obſervation, and is connected therewith, there remains, therefore, the leſs to be diſcuſſed. It has been already obſerved,

obſerved, that froſt increaſes the whiteneſs and brightneſs of oats. Therefore, the white coloured oats, in which there is little or no yellow, and where there are few or no green pointed grains to be found, are poſitively to be rejected for ſeed. It may eaſily be believed, that in a late and backward year, none of the oats will acquire that fine white and bright colour which they poſſeſs only in an early and favourable ſeaſon, unleſs it be occaſioned by ſome foreign cauſe. Now, it is certain, that it is occaſioned by the froſt. The yellow looking oats, with a great many green points, can alone be depended on for ſeed, even though they be found both light and ſoft, which in bad years, is very generally the caſe. In this choice, however, one has to combat and to conquer prejudice, and ought to be directed only by judgement. This will no doubt occaſion a very great ſtruggle; nor will prejudice perhaps be entirely overcome, till a few diſappointments are met with, which will ſhow the ſuperiority of the latter kind of grain in the cleareſt light. Upon digging up the froſted ſeed in 1783, from under the ground, I found one uniform characteriſtic in the whole of it, which was, that none of the points of the oat where the ſeed is lodged, (which is oppoſite to that where the beard grows), had ſwelled or expanded in the ſmalleſt degree, notwithſtanding the ſwelling, or even growth of the oat, in other reſpects. This led me to conjecture that this point in all froſted oats would be hard, and reſiſt the touch on preſſure; and upon trying the oats of that year which remained, by that rule, I found them anſwer exactly, as it has done in other years, when the froſt has had the ſame effect upon them. By preſſing oats much froſted, in this manner, I have often ſeen that part containing the ſeed fly off altogether, leaving the reſt of the pickle otherwiſe complete. In examining oats for ſeed by this rule, it is neceſſary to take off the huſk, and preſs the foreſaid point againſt ſome hard ſubſtance, ſuch as the nail of one's thumb. The reſiſtance at the very point is the criterion; for ſuch as are unſound will reſiſt the preſſure, notwithſtanding that every part of the grain except the point may be abſolutely ſoft.

B. K.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Britiſh Opium.*

SIR,

It is now known beyond a doubt, that as good opium may be collected in this country, from the *papaver ſomniferum*, as what comes

comes from the Eaſt Indies. From 600 heads of that kind of poppy, I, laſt year, collected five drachms of pure opium, which made eight ounces of tincture, equal in quality to what is made from foreign opium. The method of collecting opium is well deſcribed by Mr Jones, in the 18th volume of the Tranſactions of the Society of Arts. The high price of opium ſeems to have encouraged the adulteration of it in the country where it is collected; a circumſtance of ſerious conſideration in the caſe of a medicine that requires to be doſed out with great exactneſs. The poppy being an annual and hardy plant, it requires no care beyond garden culture; and as the collection of the opium is performed by women and children, I make no doubt but that this drug may be profitably attended to in every part of Great Britain.

Yours, &c. A. H.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Method of Draining practiſed in the Counties of Eſſex, &c.*

SIR,

As the method of land-draining, adopted in ſeveral Engliſh counties, eſpecially in Eſſex, Suffolk, and Herts, appears to be imperfectly underſtood in Scotland, I truſt it will not be unacceptable to your readers, to receive a ſhort detail of our cuſtomary practice; eſpecially as Mr Elkington, in his treatiſe on that important ſubject, paſſes it over nearly in ſilence.

It is neceſſary to premiſe, that the chief object in view is, to clear the ground of ſurface water; particularly if it is incumbent upon a retentive bottom, which is accompliſhed by an operation which we call hollow-draining, or land-ditching. On the ſuppoſition that a farm, under the above circumſtances, is taken upon leaſe, the firſt thing which is attended to is to have it completely ſurface-drained, in the way that I am now to mention. Various other plans may be followed; but I ſhall give you a ſketch of the practice in my neighbourhood.

The implements uſed, are a common plough, a hoe, and ſpades and ſhovels of different dimenſions. If the field is flat, we endeavour to find which way the water draws; an object particularly to be attended to, otherwiſe the drain will burſt, and prove of conſiderable injury. Let the declivity of the field be which way it will, it is proper to make the drains aſlant, at the diſtance of betwixt five and ſix yards from each other; for if parallel to the furrows,

furrows, they are liable to injury from the feet of the horses employed thereon, either in cart or plough, during the after operations. These things being held in view, our method of drainage will be easily comprehended.

We first begin with the plough, which goes twice up and down, making a deep and clean furrow, and forms the rough outline of the drain. Supposing that there is a ditch at the under part of the field, a common spade is instantly used to dig out the space of ground, which the plough, from the turn of the horses, could not reach, and this is cleaned out by a boy with a shovel, to the depth of the furrow ploughed. In converting this furrow into a drain, the work of one man and two boys is necessary, who alternately use two spades, a shovel, and a hoe. The first spade is four inches wide at top, three at bottom, and twelve in length; the second is three inches wide at top, two at bottom, and fifteen in length; the hoe resembles a scoop, is about two inches diameter, and a foot long, with a crane neck, in which a long handle is fixed *. After the plough, the first spade is used, and the crumbs are cleaned out by the shovel: the narrow spade is next resorted to, and the crumbs occasioned thereby are taken out by the hoe, when a drain is formed about 24 inches deep, 2 inches wide at bottom, and increasing gradually towards the top to the breadth of the furrow. During the going on of these operations, the other boy is employed in collecting straw, previously brought to the field, for filling up the drains, a waggon load of which is generally sufficient for an English acre. This is put in with the hand, and afterwards forced down with a spade; but great care should be taken, that none of the loose earth go into the drain with it, otherwise the whole work will be, in a great measure, rendered useless.

In laying out these drains, it is best that every one should be emptied separately; but where this cannot be accomplished, we endeavour not to put more than two acres into one leading ditch, which is generally about 2 inches deeper than the drains, in order that the water may go off with greater facility. It should be noticed, that the ends are filled up with a few stiff bushes, over which a little straw is laid, to prevent the earth getting down. The subsoil is then turned in by a boy, and the remaining earth by the plough. We pay from 3s. 6d. to 5s. per score of rods (5½ yards each); but the price is regulated by the subsoil. If it is loam, seldom more than 4s. is paid.

Some

* Should any of your readers wish to try the above mode of drainage, I beg leave to refer them to Mr Adam Bogue, Steventone Mains, near Haddington, who possesses a complete set of the tools mentioned.

Some farmers fill up drains, where the ſoil is looſe, with large ſtones, the upper ſpade being only made uſe of. Others with ſmall ſtones, or with ſifted gravel, which I think the beſt plan of all: while ſome uſe ſtraw or underwood. A gentleman in this neighbourhood prefers ſcudding, or twiſting ſtraw into ropes, as is done for ſtacks; but in this caſe, it ſhould be very evenly done, that the earth may not run down the ſide of the drain. It is aſtoniſhing to ſee the alteration made upon a field by this ſimple mode of drainage. One that would previouſly hold water two or three days, gets dry in a few hours, whilſt the under drains will be running with the greateſt rapidity. Allow me to conclude with an extract from Vancouvre's agricultural ſurvey of Eſſex, which exactly correſponds with my ideas upon this ſubject.

Speaking of ſurface draining, he ſays, 'There is no improvement to which the heavy land huſbandry of this county owes ſo much, as to the fortunate introduction and continuance of this practice. The means of melioration, and the conſequent ſources of fertility, thence derived from the ſoil, over and above what it formerly yielded, are not more important in the preſent day, than permanent and precious, as they muſt prove in their conſequences hereafter. The few inſtances of invincible blindneſs to the beneficial effects of this excellent practice, go no farther than to prove, that when work is properly executed, it never ceaſes to produce the deſired effect. To complete an improvement of this nature, much is neceſſary to be attended to. If the field propoſed to be drained lies greatly upon the deſcent, every care ſhould be taken to make the drains bear ſufficiently horizontally; in the *firſt* place, to prevent a too precipitate fall of water, by which the drains would be worn uneven, and a temporary obſtruction occaſion them to blow; and, *ſecondly*, becauſe the more perfectly horizontal the field is, ſo that it lies level free, and affords a ſufficient fall for the water, the leſs occaſion will there be for the ſame number of drains, as would be required upon a ſoil of equal cloſeneſs upon the ſide of a hill. The drains in a field that lies nearly level, draw equally well upon each ſide; whereas, thoſe on the hang of a hill draw only from the higher ſides, and conſequently require them to be made much nearer and cloſer to each other.' I am, yours, &c.

*Eſſex, March* 26. 1803. R. S.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

IF you think the following defultory obſervations, on ſubjects connected with the deſign of your Magazine, worthy of a place in it, you will oblige me by inſerting them.

## *On the Turnip Fly.*

About the month of Auguſt laſt, the following paragraph appeared in moſt of the newſpapers. 'At Mr Coke's late annual ſheep-ſhearing meeting, no leſs than 250 agriculturiſts were preſent. Before the company ſeparated, a ſubſcription of 200 guineas being cloſed for the diſcovery of a preſervative for turnips againſt the inſect called the *Fly* (on condition that it proved ſatisfactory to the ſubſcribers), the ſecret was declared; which is, to ſow two pounds of radiſh ſeed, on every acre of turnip land, with the turnips; which, according to the declaration of the inventor, will ſo attract the fly, as to prevent its proving at all injurious to the turnips.'

The following extract from the Annual Regiſter for 1768, will completely ſhew that this is no new diſcovery; and that as an account of this preventative againſt the turnip fly has been already *publiſhed*, the perſon claiming the above 200 guineas, can have no juſt title to any reward.

In an account of 'An improved method of cultivating the turnip cabbage,' ſent by Mr Reynolds of Adiſham, in Kent, to the Society for the Encouragement of Arts, &c. dated the 13th May 1768, the following paſſage occurs: 'As the flies will be apt to fall upon, and deſtroy the young ſeedling plants, the following remedy ſhould be uſed. Mix the intended ſeed with long-topped radiſh ſeed, which the flies much admire: The radiſh leaves being quick growers, will entertain theſe inſects until the other ſeed plants get out of their way; but if they are very numerous, run a light roller over them, night and morning, while the dew remains. This will lick up moſt of them, if duly performed; for a little moiſture cauſes both them and the earth to ſtick to the roller; by which means the enemy will be removed, and the young plants no way injured by it.

'*N. B.*—One pound of radiſh ſeed is ſufficient for ten or twelve pounds of turnip cabbage; but cabbage and cauliflower require more, eſpecially the latter.'

*On*

## *On the Weather.*

Nothing would be of more importance to agriculture, than a rational theory of the weather; but although meteorological obfervations have of late years been multiplied to a great extent, yet ſtill I am afraid our *data* are not ſufficient to enable natural philoſophers to form a rational theory.

The variety of circumſtances to be taken into account, before one table of obſervations can be properly compared with another, and the differences in the manner, time and form, obſervable in almoſt all of them, tend more to obſcure, than to elucidate, the ſubject. Such unremitted attention to ſo many objects, is required to form a complete table, that few perſons capable of doing it are inclined, or have it in their power, to beſtow upon it the neceſſary time. The moſt therefore that can be hoped for, but which would be of *infinite conſequence*, would be perhaps a probable conjecture as to the general character of ſucceeding ſeaſons, whether we might look for a dry or a wet ſummer, an open or a froſty winter.

Mr Kirwan (ſee *Encyclop. Britan.* article *Weather*) has lately endeavoured to diſcover probable rules for prognoſticating the different ſeaſons, ſo far as regards Britain and Ireland, from tables of obſervation alone. On peruſing a number of obſervations taken in England from 1677 to 1789, he found,

1. That when there has been no ſtorm before or after the vernal equinox, the enſuing ſummer is generally *dry*, at leaſt, five times in ſix.

2. That when a ſtorm happens from an eaſterly point, either on the 19th, 20th, or 21ſt of May, the ſucceeding ſummer is generally *dry* four times in five.

3. That when a ſtorm ariſes on the 25th, 26th, or 27th of March (and not before) in any point, the ſucceeding ſummer is generally *dry* four times in five.

4. If there be a ſtorm at ſouth-weſt, or weſt ſouth-weſt, on the 19th, 20th, 21ſt, or 22d of March, the ſucceeding ſummer is generally *wet* five times in ſix.

I am inclined to pay ſome attention to theſe rules, from the circumſtance of his 4th one being apparently verified laſt ſummer, at leaſt, in this part of the country; the night of the 20th day of March 1802 having been very ſtormy, the wind ſouth-weſt, and the laſt ſummer having been ſo very *wet*, that we had only nine days quite fair in the whole month of July.

According to the above rule, there are five chances to one, that

that the next ſummer will alſo be a *wet* one; as, on the night of the 19th of March laſt, we had an exceſſive high wind from ſouth or ſouth-weſt, but rather more to the ſouth.

Your Conſtant Reader, S. E.

*Roxburghſhire, April* 4.

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FOR THE FARMER'S MAGAZINE.

[Though we are not fond of inſerting papers in our work already printed and circulated, or of imitating the practice of cotemporary editors, who eke out their Numbers in that way, yet the following account of an Experimental Agricultural Society recently inſtituted, and the rules adopted by them, are ſo much to our mind, that we are induced to lay them before our readers. Wiſhing the Society every kind of ſucceſs, and truſting to be favoured with periodical accounts of their proceedings, we earneſtly recommend their plan to the conſideration of Agriculturiſts in other diſtricts.]

*Experimental Agriculture in the County of Durham.*

An experimental farm has been a favourite part of the ſcheme, in moſt of the plans ſuggeſted for the improvement of agriculture; but the great expence attending it, the difficulty of finding a farm containing a ſufficient variety of ſoils, of procuring a proper perſon to manage it, and of arranging matters ſo, that the experiments tried thereon ſhould be reported with accuracy, have, together with other obſtacles, prevented it, though promiſing in theory, from being reduced to practice.

On conſidering this ſubject, however, it was ſuggeſted, that by a few individuals, fond of agriculture, aſſociating together, and agreeing to try experiments on their reſpective farms, under ſuch regulations as might tend to prevent miſtakes, many of the advantages of an experimental farm might be obtained: And this ſuggeſtion gave riſe to the idea of forming a Society, the general objects of which ſhould be—

*Firſt*, To examine, by experiments, the different kinds and merits of graſs, ſeeds, and grain; to inveſtigate their habits, and endeavour to aſcertain what ſoils are beſt adapted to each kind; and to deviſe means to obtain ſuch ſeeds, &c. pure.

*Second*,

*Second*, To attend carefully to the rearing of fences, draining of land, and the beſt and moſt expeditious way of cleaning and working different ſoils.

*Third*, To examine the nature of different manures, and aſcertain the beſt mode of applying them.

*Fourth*, To find what ſtock is beſt calculated for certain ſituations, to compare the relative quantity of food conſumed by different kinds of ſtock, what food is moſt congenial, &c.

As accuracy, however, ſhould be the leading principle of the Society, its experiments cannot, of courſe, be numerous; but ſhould ſimilar Societies be formed, and enter into a correſpondence with each other, the experiments might be multiplied in a great degree, and accuracy ſtill retained.

## Rules.

1. This Society ſhall be limited to twenty-one members.

2. The Society ſhall meet four times in the year, between the 1ſt of February and the 5th of November (both days excluſive) at Ruſhyford. The time of meeting, eleven o'clock in the forenoon.

3. A vacancy happening in the Society ſhall be filled by ballot—Two black balls excluding a candidate.

4. A Committee, conſiſting of five members (three to be a quorum) ſhall be annually choſen, at the firſt meeting in the year, as alſo a Preſident, Vice-Preſident, and Secretary of the Society.

5. The Members of the Committee ſhall be re-eligible.

6. If a vacancy happen in the Committee, it ſhall be filled up by the remaining members, until the next annual election.

7. The expediency of any propoſed experiment ſhall be determined upon by the Committee, previouſly to its adoption by the Society.

8. When any member undertakes an experiment adopted by the Society, two members ſhall be appointed as viſitors, to view with him the ſtate of the land previous to the experiment, inſpect its progreſs, and report the reſult.

9. That the proceedings of each meeting ſhall be entered by the Secretary in a book kept for that purpoſe.

10. If ſimilar Societies ſhall be formed in other counties, this Society ſhall expreſs its deſire of entering into a correſpondence with them.

11. The Society ſhall admit correſponding members, the candidates being propoſed at one meeting, and balloted for the next, two black balls being a rejection. The perſon propoſed muſt not be a reſident of that part of the county of Durham which lies between

between the rivers Tees and Tyne, nor of a diſtrict in which there is an Agricultural Society correſponding with this.

12. If a correſponding member be willing to adopt any experiment recommended by this Society, the Committee will tranſmit him the precautions under which the experiment ought to be carried forward; but the experiment and its reſult are not to be entered by the Society in their journals, or ſanctioned by their authority, unleſs the land on which it is tried be previouſly viewed, and the progreſs of the experiment duly inſpected by an ordinary member, appointed for that purpoſe.

13. No perſon reſiding in that part of the county of Durham, which lies between the rivers Tees and Tyne, ſhall be admiſſible as a viſitor.

14. No converſation on religion, or on general or local politics, ſhall be allowed at the meetings.

15. The proceedings of the Society ſhall be cloſed before dinner. Dinner ſhall be ſerved at two o'clock.

16. On the firſt meeting in the year, each member ſhall pay into the hands of the Secretary ten ſhillings for the ordinaries of the year.

17. Each member ſhall pay one guinea into the hands of the Secretary, as a fund for the expences of the Society.

18. When any member undertakes an experiment adopted by the Society, he ſhall pay the market-price of the article; any *extra* charge to be defrayed from the general fund.

19. No alteration ſhall be made in the rules of the Society, but on the day of electing the Committee; nor no new rule made, except a majority of the Society are preſent.

20. The rules ſhall be printed, and a copy of them ſent to each member.

MEMBERS.

Sir Henry Vane Tempeſt, Bart. Wynyard—Robert Colling, Barmpton—Chriſtopher Maſon, Chilton—George Baker, Elemore—Charles Colling, Kelton—Matthew Culley, Denton—John Trotter, Haughton—John Neſham, Houghton-le-Spring—William Taylor, Biſhop Middleham—George Taylor, St Helen Auckland—Luke Seymour, Woodhouſe Cloſe—John Ralph Fenwick, Durham—William Beckwith, Herrington—Robert Waugh, Biſhop Middleham—Duncomb Shaftoe, Whitworth—James Clark, Burnigill—Robert Surtees, Mainsforth—Richard White, Kelloe—Robert Page, School Aycliff—Ralph Lambton, Lumley Park—John Colpits, Stretlam Caſtle.

*Office-Bearers of the Society for the year* 1803—Sir H. V. Tempeſt, Preſident—Robert Colling, Vice-Preſident—Robert Waugh, Secretary.

*Acting Committee for the year* 1803.—Robert Colling—John Ralph Fenwick—George Taylor—Charles Colling—Luke Seymour.

*Days of Meeting for the year* 1803.—Friday, April 1st—Wednesday, June 1st—and Friday, November 4th.

ROBERT WAUGH, *Secretary.*

*Rushyford, February* 2. 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Observations on Shell Marl as a Manure.*

SIR,

I am a constant reader of your useful Magazine, the tendency whereof, to promote the interests of agriculture, is indisputable, and therefore entitled to the support of agriculturists. Agreeable to this principle, I have, in compliance with the request of your correspondent from Ireland, who asks for information concerning the use and application of marl, page 76th of this Volume, sent you some observations on its application and good effects as a manure. They proceed from an experience of its usefulness for a number of years past, and you are at liberty to insert them in the Farmer's Magazine.

In the south of Scotland, where my farm is situated, we are at a great distance from lime; but, in a number of places, this loss is nearly compensated by large quantities of fine shell marl, which is found in bogs and mosses; and which I consider to be a better manure than lime upon a dry warm soil; and, upon all other soils, except a cold wet moorish one, as nearly equal to it.

It is about twenty years since I began to marl my farm, one half of which consists of a good dry soil, fit for the turnip husbandry; the other half is mixed with clay, and unfit for turnips and barley, but adapted for almost any other crop. Upon both those soils, the marl has had a very great effect. Previous to its application, the crops, both of corn and grass, were but indifferent; but since that period, my crops of corn have been very good, fully one third more bolls per acre than before: the grass, both for hay and pasturage, has been still more benefited by it. The quantity per English acre that I applied, was from 30 to 35 single horse cart loads on the dry soil, and from 35 to 40 ditto on the clay soil; which quantities, upon my farm, I have found sufficient. Upon very light soils, I would

would not adviſe to lay above 20 or 25 ſingle cart loads, as that kind of ſoil is very eaſily overdone, and may, by an overdoze, be rendered a *caput mortuum*. Strong clay ſoils will require at leaſt 50 cart loads to do them properly. It is not eaſy to give this kind of ſoil an overdoze. The above quantities are ſtated as ſufficient for an Engliſh acre, upon the ſuppoſition that the marl is of good quality; for if it is of an inferior kind, an additional quantity per acre muſt be given.

The common way of applying marl, is upon ſummer fallow, or on the face of graſs. Before laying it on fallow, the land ſhould at leaſt get two ploughings, and then be harrowed and rolled, to make the ſurface ſmooth, that the marl may ſpread equally over it; two ploughings ſhould alſo be given after the marl is laid on, to mix it as well as poſſible with the ſoil. In general, the firſt crop receives little benefit from the marl, but it will appear abundantly on the ſucceeding crops; and if the land is properly cultivated, by white and green crops being taken alternately, it will continue to have effect for fifteen or twenty years. After land is newly marled, too many crops ſhould not be taken until it is laid down to graſs, and reſted a year or two. Three crops after newly marled land are ſufficient, viz. firſt, wheat or oats; ſecond, turnips, peas, potatoes, &c.; third, barley. Marl is alſo very often laid upon the face of graſs land at the end of harveſt, or during the winter, and the land allowed to lye in graſs for a year or two afterwards. This I conſider to be the beſt way of applying marl: for, the very firſt ſummer after marling, you have a great additional quantity of graſs; and when the land is taken up for tillage, the effects of it appear eminently upon the firſt crop of corn.

It is a doubt among a number of farmers, whether dreſſing land the ſecond time with marl will have any good effect or not. I know ſome, that have tried it, ſay they can perceive no benefit from it; but, as they are rather far from the marl-pit, I am inclined to think that they have not given the land a ſufficient doze; as I am fully convinced, that the ſecond dreſſing, to make it have proper effect, requires a larger doze than the firſt. Upon this principle, I have two years ago begun to marl my farm the ſecond time; and the enſuing crop will enable me to determine, from real experience, whether marl has a good effect, when repeated, or not; the reſult of which, if you think this of any uſe, may become the ſubject of ſome future communication. I am, Sir, your moſt humble and obedient ſervant,

*Feb.* 28. 1803. A South Country Farmer.



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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Hints reſpecting Scots Improvers*

SIR,

I HAVE been a reader of your Magazine ſince its firſt publication, and have had reaſon, along with, I ſuppoſe, all your other readers, equally to approve of the utility of the plan, and the excellence of the execution. It muſt give infinite ſatisfaction to every man, who has the good of his country at heart, or who wiſhes well to the beſt intereſt of Scotland, to obſerve that the ſtate of her agriculture has now been brought to a degree of perfection, equal, or perhaps in ſeveral reſpects ſuperior, to that of any other country whatever.

As it ſeems to be univerſally acknowledged that this high degree of perfection, in the ſtate of our Scotiſh agriculture, has been wholly brought about in the courſe of the 18th century, (a period, of ſuch recent date, that facts and circumſtances can be eaſily inveſtigated), I think it would be a very acceptable preſent to the public, and a particular gratification to the lovers of the firſt of all arts, if ſhort notices were given from time to time, in your Magazine, of the means by which, and the men by whom, this fortunate revolution has been effectuated in ſo ſhort a period of time.

In the leading article of Agricultural Intelligence for laſt quarter, in deducing the cauſes of this rapid progreſs of improvement in the courſe of laſt century, I ſee a few well known and illuſtrious names mentioned, as the chief promoters of agriculture in the period referred to; namely, Fletcher of Saltoun, Cockburn of Ormiſton, Hope of Rankeillar, the Earl of Findlater, and Lord Kaimes. But although the merits and exertions of theſe diſtinguiſhed characters are univerſally acknowledged, yet I apprehend that in the ſeveral departments of enclоſing, draining, planting, road-making, village-building, cottage architecture, conſtruction of leaſes, preparation of manures; in the diſcovery and combination of the mechanical powers; and in other branches of rural œconomy and improvement; ſeveral other illuſtrious and meritorious names may be included.—Among theſe, I would mention Archibald Duke of Argyle; the great Earl of Stair; the late Alexander Earl of Eglinton; the late Earl of Strathmore; the late Earl of Elgin, the conſtructor of the lime works; Lord Gardenſton; the late Sir Archibald Grant of Monymuſk, the great planter; Mr Craik of Arbigland; Mr Barclay of Urie; Mr John Hunter at Hirſel, the noted Berwickſhire farmer; the Meſſrs. Meikles, the juſtly celebrated millwrights;

wrights; and the Meſſrs. Dickſons, at Haſſendeanburn, the famous nurſerymen.

Detached, and, in ſome inſtances, very particularly detailed accounts of the operations of each of theſe noblemen and gentlemen, are to be found in Wight's Survey of Scotiſh Huſbandry, in the Statiſtical Account of Scotland, in ſome of the numerous tours through Scotland that have been lately publiſhed, or in other publications; but as theſe are bulky and voluminous works, and not acceſſible to every reader, I am of opinion that ſhort and condenſed notices of their exertions and practice might, with much advantage, be occaſionally inſerted in your Magazine. The repreſentation of their labours and ſucceſs, would not only be highly uſeful and inſtructive, and exciting to the preſent improver; but theſe notices might be looked upon as ſo many monuments, erected by grateful poſterity, to the memory of men who ſo much benefited their country, and contributed ſo much to the good of ſociety.

And were ſhort memoirs of the operations and exertions of theſe, and ſome other ſpirited and patriotic noblemen and gentlemen, given occaſionally, they would form a maſs and body of information, from whence a complete and connected hiſtory of Scotiſh agriculture might be deduced, which would not only be entertaining, but highly inſtructive. We would there ſee the former waſte and forlorn ſtate of the country, and the impoveriſhed and miſerable ſituation of the people: We would ſee the obſtacles which theſe ſpirited and ſagacious improvers had to encounter with, from the ignorance, ſloth, and poverty of the tenantry; from the want of markets and ſcarcity of money; from the badneſs of the roads, and difficulty of intercommunication between one part of the country and another; from the great ſcarcity of artificial manures, and the difficulty of preparing them; from the total want of experience and precedent; and, finally, from the want or improper conſtruction of the implements of agriculture, and the ignorance, obſtinacy, and want of ſkill in ſervants: and we would ſee in what way theſe obſtacles were gradually ſurmounted, and how the knowledge and practice of agriculture have been brought to their preſent ſtate of perfection.

If the hiſtory and operations of the eminent ſtateſman, the illuſtrious military captain, or the celebrated writer, are intereſting, and peruſed with avidity; in the ſame way ſhould the hiſtory and operations of the ſpirited and patriotic improver of his country become intereſting, and be ſought after with aſſiduity, as being generally of more importance to ſociety than thoſe of the former characters. The hiſtory and repreſentation of ſucceſsful

ceſsful enterpriſe, carry with them much valuable inſtruction, as being incentives to ſimilar attempts, and guides in the execution of them. And I may here conclude theſe ſhort remarks and ſuggeſtions with the well known and often quoted obſervation of Dr Swift, 'That that man who doubles the productive powers of the earth, is a more uſeful member of the community than all the race of politicians put together.'

I am yours, &c. AMICUS SCOTIÆ.

*London, 8th April* 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Potato Curl.*

SIR,

THE curl in potatoes, and ſmut in wheat, have been the ſubjects of much ingenious diſcuſſion in various publications; in ſeveral of which it is ſtated, that we know how to prevent theſe baneful maladies. Judging from my own practice, however, I muſt ſay, that I will more readily ſubſcribe to this ſtatement, with reſpect to the latter, than the former diſeaſe. Your correſpondent 'AGRICOLA,' conſiders the checks received by the young plants, about the time of their coming above ground, as the cauſe of curl; and therefore condemns *early* planting, recommending the firſt week in May, or the laſt in April, as the moſt advantageous time for that operation; and, *perhaps*, he is right in thinking that ſuch checks are the *leading* cauſe of curl. Seeing, however, that ſome ſeaſons are early, and ſome late; that we cannot regulate the firſt appearance of the young plants by the time of committing the ſeed to the ground; and that, in ſome ſeaſons, the weather is more warm and ſalubrious to ſuch vegetables, in May, than in June, and *vice verſa*; the difficulty of *prevention*, on this hypotheſis, ſeems inſurmountable. From what 'AGRICOLA' ſays, as to the potatoes from the curled ſtems polluting the ſucceeding crop, it would appear that he ſuppoſes the curl to ariſe, in ſome degree, from imperfect ſeed. He does not, however, ſtate his opinion as to the manner in which the infection is communicated—whether by juxta poſition, or otherwiſe. Some contend that it is communicated in the former way to *perfect* potatoes; others, that it is communicated to thoſe *only* which are raiſed from ſeed taken from curled ſtems; and ſome, that a perfect potato, which has never come in contact with, or near, any of thoſe which have been taken from curled plants, will ſometimes raiſe a diſeaſed ſtem. On theſe points, perhaps,

perhaps, accurate experiments are wanting to enable us to ſpeak confidently.

That imperfect ſeed is the cauſe of curl, is an hypotheſis which has been ably defended; and I muſt own, that facts have ſometimes fallen within my obſervation which greatly corroborate it. Still, however, I entertain ſome doubts that it is not well-founded; and one cauſe of my ſcepticiſm is, *that, from the ſame cut or ſet, one plant is ſometimes found perfect, while another is curled:* and I ſhould be glad if ſome of the advocates of this theory would, through the medium of your Magazine, be ſo obliging as to inform me how they account for this phenomenon. At preſent, I am more inclined to believe, that inſects and worms (perhaps, in ſome degree, brought forward by checks or blights) are the cauſe of curl, than to adopt any other theory; and, at a future period, perhaps, I may do myſelf the pleaſure of offering you remarks, at conſiderable length, in ſupport of it, and alſo of furniſhing the reſults of ſome accurate experiments in raiſing crops of potatoes from ſhoots, cuts, and *whole* ſets. For reaſons well known to you, however, I cannot at preſent take the liberty of encroaching farther on your time, than merely to ſay, that as you formerly publiſhed a paper from me, on Manuring, and Paring, and Burning, ſigned 'RURICOLA,' and as another correſpondent has, in laſt Number, adopted that ſignature, I ſhall now, for diſtinction's ſake, ſubſcribe myſelf,

Yours, &c. RURICOLA SENIOR.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Superiority of Horſes to Oxen in Farm Labour, and Yoking three abreaſt, in certain circumſtances, without a Driver.*

SIR,

NOT having been originally educated in the ſchool of practical agriculture, but having of late years engaged in the practice of it, on a ſmall farm of my own, and having conceived a very warm predilection for it, I am among the number who think that much uſeful information on the ſubject is to be obtained from reading; more eſpecially as, of late years, ſo many intelligent practical agriculturiſts have favoured the public with their obſervations. If I am not much miſtaken, indeed, what may be termed the leading or firſt principles of it, may be very well acquired in this way, and will be found the beſt guide in actual practice afterwards. As this holds good in moſt of the

arts and ſciences, it appears to me not leſs applicable to agriculture. Viewing the matter in this way, I have been a conſtant reader of your uſeful Magazine ever ſince its firſt publication. I am greatly pleaſed to hear of its increaſing celebrity and ſucceſs, and am indeed ſo much a friend to the undertaking, that I could wiſh to ſee it enlarged, even beyond the Appendix and Index, promiſed in the laſt Number at the end of the year. This muſt neceſſarily, as a matter of courſe, be attended with an increaſe of the price of it; but, in an age like the preſent, eager after agricultural information, I muſt ſuppoſe that the generality of your readers would willingly accede to any price for which they had *value received*; and you appear to have abundance of valuable materials crowding on you for that purpoſe. To old expert agriculturiſts, your work may perhaps be of leſs conſequence; but as I am not of that deſcription, and probably a great proportion of your readers are not, I am ready to acknowledge, that I have reaped conſiderable information, and I hope benefit, from it. To your very intelligent correſpondent, who writes 'Strictures on Farm-Management near London,' I feel peculiar obligation. Poſſeſſing a farm, though on a ſmall ſcale, ſimilar in many reſpects to that of his friend to whom he gives advice, I have already begun a plan of improvement on his ſyſtem, which I mean to follow up, becauſe I believe it to be really ſterling. If my abilities were equal to my inclination, I would very willingly ſend you my occaſional contribution to your work; but I have to regret, that this is by no means the caſe; however, I would fain ſhow you, that I am at leaſt not wanting in the latter.

The employment of horſes or oxen in farm culture, has been long a ſubject keenly conteſted; and in almoſt every Number of your Magazine, we have ſomething on it. Were we to attend to ſpeculations, or laboured diſcuſſions, or even the apparently more convincing evidence of detailed calculation on this point, we would be much at a loſs; but the almoſt univerſal preference to horſes by the farmers of this country, is a pretty concluſive argument in their favour. I mean not to enter into any reaſoning on this ſubject, but to ſhow, not merely what can be, or ought to be done by a pair of horſes, but what has actually been performed on my own farm, and under my own eye, in the courſe of laſt year, by a pair of horſes. If I am not much miſtaken, it will rather tend to bear out our farmers in their general preference to horſes; while, at the ſame time, I ſuppoſe ſome of them can produce a greater quantity of work performed by the ſame ſtrength, and in the ſame time. As this ſubject has aſſumed the appearance of controverſy almoſt more than any other, and produced rather pointed language from

from ſome of your correſpondents, I apprehend, that ſuch ſtatements of facts will go farther towards ſettling this knotty point, than any other mode of diſcuſſing it. But to come to particulars. In the *firſt* place, my horſes ploughed one hundred and eight Scotch acres, of ſtrong clay ſoil, with all the harrowings and rollings: they carted above a thouſand carts (ſingle-horſe carts, the way they are always worked) of earth from one ſide of an eight acre field to the other: they brought earth from a diſtance of two miles, to fill, about half way up, three hundred yards of a drain, three feet deep, the ſame width at top, and a ſpade wide at bottom: led out eighty carts of dung to an adjoining field: brought home, thraſhed out, and carried to market, the produce of twenty-nine acres—a heavy crop: were a week employed carting ſtones for making up fences; beſides bringing home the family coals, I ſuppoſe equal to another week; and doing all the other ſmaller jobs about a farm, not eaſily enumerated, but which are well known to be many. All theſe ploughings, harrowings, rollings, and cartings (except filling the earth and dung into the carts), were performed by one man. As I have mentioned the work my horſes performed, it may be proper to ſay how they were treated. They are always fully nine hours in the yoke, when the ſeaſon is far enough advanced to admit of it—five in the morning, and four in the afternoon; when they get three feeds of oats, or, what I have found far preferable, oats morning and mid-day, and raw potatoes at night—hay for fodder. During the ſhort days, they have but one yoking of ſix hours; when they get two feeds of oats, with ſtraw for fodder. In ſummer, they have cut graſs in the houſe during the day, and are put out on good paſture during the night. I believe being out all night makes them more hardy, and is of benefit to their health; but before turning them out, they are allowed to cool in the ſtable, and to be quite filled with cut graſs. I have always found, that two good horſes, well fed, and their work properly timed, will perform as much as almoſt any man is able for, and more than moſt of them will do. I ſhould be glad to hear from ſome of your advocates for oxen, (and I would more particularly addreſs myſelf to your correſpondent in your 7th Number, page 281), what number of his oxen (as they appear to be of a ſuperior kind), and what number of ſervants it would require, to perform the quantity of work ſtated above. This might perhaps afford ſomething like the debtor and creditor ſtatement, although not preciſely what the Conductor, in his note to that correſpondent, mentions. If your correſpondent MAGO receives from ALFRED an anſwer to his firſt query, page 54. of your laſt Number,

ber, this may perhaps ſerve for making a comparative ſtatement with his oxen; keeping in remembrance, that as I have a clay ſoil to manage, there were of courſe many days in the year when my horſes could not work, as I never attempt to plough it wet. On ſuch ſoils, I believe oxen totally inadmiſſible; becauſe, from wet weather, they are often thrown late, and, in that caſe, whenever the weather favours, ſuch *extra* exertion is neceſſary as they are quite unequal to.

As it is not altogether foreign from the ſubject I have been on, I ſhall offer ſome remarks on a paſſage in your Magazine for May laſt, on ploughing with three horſes abreaſt. In page 251. there is a very proper animadverſion on this prevailing practice in Annandale. I am quite ſatisfied, that, in ordinary circumſtances, two good horſes are always ſufficient; but I am alſo ſatisfied, in ſome circumſtances they are not. My farm is of a very deep rich clay, and, I had reaſon to think, had been but ſlightly ploughed for ſome time before I got it: I therefore conceived it would be of great conſequence to give it a deep ſubſtantial ploughing. With this view, in croſſing my ſummer-fallow, it was ploughed to the depth of ten inches, and in ſome places a foot. Although I have a pair of very powerful horſes, I found, that to take ſo deep a furrow in heavy land, was quite oppreſſing them; and as my ſervant had a great averſion to a driver, and no great opinion of the utility of a third horſe yoked in the common way as a leader, he yoked three abreaſt, and drove them as readily as he did a pair. Saving the expence of a driver is a material conſideration; and he cannot be diſpenſed with, in the common way of yoking, where a third horſe becomes neceſſary. I know not whether, in Annandale, where three are uſed abreaſt, a driver is employed. Although it may appear, at firſt ſight, quite a ſimple buſineſs to have three horſes abreaſt driven by the man who holds the plough; yet, upon trial, it will not be found ſo eaſy. It requires both well-trained horſes, and an able ploughman, to do it to purpoſe. The horſes will be found to puſh one another much more than in the common way, and conſequently go over a great deal more ground, which, with the deep furrow, in this caſe, is very ſevere work for the ploughman. I found alſo, that with ſuch a furrow, they could do at leaſt a fourth more work than could be done by two, and with more eaſe to themſelves. They ploughed an eight Scotch acre field in ſeven days; and the work, by excellent judges, was allowed to be done in capital ſtyle. I ſuſpect it would have required eight oxen, with two ploughmen and two drivers, to have performed the ſame work. The concluſion I would

would draw is, that, in croſs-ploughing heavy land, where a deep furrow is judged requiſite, and, conſequently, where at leaſt three horſes would be uſed, they ought to be yoked abreaſt, not merely becauſe it ſaves a driver, but becauſe they will be found much more powerful in the draught, both from being ſo near it, and of neceſſity drawing together. I believe, indeed, they are equal to four, where two are yoked as leaders; and this is not only the opinion of the man who drove them, an excellent and expert ploughman, but of ſeveral neighbouring farmers who were upon the field while they were at work. It is only in croſs-ploughing that three horſes can be uſed abreaſt; for, in ploughing ridges lengthways, it would unavoidably occaſion poaching on the ploughed land. It may poſſibly ſave a little trouble in adjuſting matters to thoſe who might think of trying this method, to mention, that I found mine to anſwer very well. A plough muzzle, wider, and a little ſtouter than that commonly uſed, is neceſſary; about ſixteen inches, with as many holes. The reaſon of this is, that the plough inclines to take a great deal of land. To the muzzle is attached, in the common way, a pretty ſtout plough-tree, five feet two inches long; a ſingle horſe, with a common plough or harrow tree, is yoked to the left hand or land end of the long tree; to the other end of it, are yoked two horſes, preciſely as if they were to be put into the plough by themſelves. The off-ſide, or right-hand horſe, goes in the furrow, in the uſual way, the other two on the land. It is ſcarcely neceſſary to add, that the ſingle horſe muſt have as much of the long tree as makes him equal to the other two—about three fifths; but this will vary a little, according to the relative ſtrength of the three horſes. For adjuſting this readily, there is, on the fore part of the long tree, an iron plate, with ſeveral holes in it. If theſe obſervations are worth your acceptance, they are very much at your ſervice; if not, it will be but little trouble to throw them into the fire. M.

*March* 4. 1803.

*P. S.*—In conſequence, probably, of the deep ploughing of my fallow above mentioned, by bringing up good ſoil long buried, my wheat appears rather too thick, although ſown with only eight pecks per Scotch acre: ſix would probably have been ſufficient.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Management of Calves.*

SIR,

IN the 13th Number of the Magazine, your correſpondent W. D. wiſhes to know a cure for young calves ſeized with the diſorder called the *cords*. This diſeaſe is very common in Britain, and I believe more ſo in cold weather than in warm, and ſeldom cured; but, if we cannot cure a diſeaſe, we ſhould try to prevent it. I have been in the habit of rearing cattle upwards of thirty years; and if you think my way of managing young calves worth a corner in your intelligent Magazine, you are heartily welcome to a deſcription of it. If I can contribute a mite towards the improvement of my country, it will give me pleaſure.

My cows, when bulled, are regularly noted down in a book; and when they are near the calving, they are watched frequently night and day. How ſoon the calf is dropped, it is received into a large baſket or ſkull, made of willows, with a handle at each end, and plenty of clean dry ſtraw in it. It is then carried by two perſons to the ſtall in the calf-houſe, where it is gently rubbed and dried with ſtraw. My calf-houſe is next to the cow-byre, and is fitted up with ſtalls like a ſtable, about 3 feet wide, and about 5 feet long. Every ſtall ſhuts in by itſelf, with a door and hinges, for fear of the calf lying back too far, to choke itſelf in its binding. How ſoon the mother gets a little reſt after calving, ſhe is milked, and a little of the milk given to the calf, as early as poſſible. If the weather is cold, and the mother long in giving milk, it is taken to the fire, and warmed in a pan until it is blood warm, and then given to the calf, about 6 or 8 gills, according to the ſize of the calf, and repeated four times in twenty-four hours. As the calf gathers ſtrength, the quantity may be increaſed; but too much of milk at one time is as bad as too little, until it is a month or ſix weeks old. When the calf is able to ſtand, I tie it to a ſtake; as it is more in the power of the ſervant to give it milk in that ſituation, than when going about looſe. If a calf gets cold milk, it is ſure to bring on a trembling, and the cords or ſome other malady follows; which I have often ſeen exemplified amongſt the young ſtock of my neighbours. The above has been my ſcheme of rearing calves; and I never had one died of the cords, if fed in this way, and kept dry. I am, Sir, your humble ſervant,

*Mearns, 29th March* 1803. F. N.

NOTE BY THE CONDUCTOR.

Some other communications have been received on the above ſubject, recommending the like preventive as pointed out by Mr F. N. We believe it has never failed.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Inoculating Sheep for the Scab.*

SIR,

ANALOGY, the moſt fertile ſource of error in the theories of metaphyſicians, and the ſpeculations of philoſophers, has, on the contrary, led the way to the moſt important diſcoveries in thoſe departments of phyſiology which regard the organization, functions, and phenomena of the animal body. Whatever difference may exiſt between man and the brutes in an intellectual conſideration, there can be no doubt that the laws, which regulate the corporeal changes of the one, hold equal empire over the operations of the other. Obſervations made on the latter, have been applied with ſucceſs to the former; and, in fact, moſt of thoſe improvements, which have advanced the medical art (in relation to the human body) to its preſent perfection, have originated from an application of thoſe principles, which were deduced from an examination and explanation of the corporeal phenomena exhibited by the lower animals. Morbid affections of a ſimilar nature occur in each; frequently proceeding from the ſame cauſe, frequently attended by the ſame circumſtances, and frequently obviated by the ſame means. But, what is more ſingular, diſeaſes which appeared peculiar to the one claſs, have been found tranſmiſſible to the other, and have actually been employed in this way as a mean of moderating or even preventing the more virulent influence of ſome more inveterate diſeaſe, annually ſwept away thouſands of our fellow creatures. Were it neceſſary to confine the foregoing obſervations, an appeal might be made to the late happy introduction of the Vaccine inoculation, which bids fair to extirpate the ſevereſt ſcourge, and moſt bitter enemy, that ever perhaps ravaged numbers of mankind. If, therefore, we perceive ſuch advantages reſulting to the human ſpecies from the tranſmiſſion of a diſeaſe, thought peculiar to the lower animals; if, conſequently, (as we muſt be) we are convinced, that the principles upon which the phyſical organization of both claſſes depends, are analogous; that the laws which regulate the corporeal changes in either are the ſame, and that concluſions drawn from the one ſide may be alſo applied to the other, and *vice verſa*, indiſcriminately; why heſitate to purſue a path, which expands to ſuch unlimited extent? Not only the malignancy of ſome of the diſeaſes of man may be diminiſhed by a tranſmiſſion of thoſe exhibited by the lower animals; but, upon the ſame principles, the malignant diſeaſes of the latter may in ſome meaſure be counteracted by

by a similar transmission from the former? Or, at least, why may we not justly conclude that the means, employed to prevent or obviate certain diseases in the human species, may also, with equal success be employed to obviate analogous diseases in the inferior animals? It is to this latter point I wish to direct your attention; for it surely is an object worthy the attention of the farmer, breeder, and improver.

As a matter of speculation, I have for some time conceived, that the infectious cutaneous disease incident to sheep, commonly known by the name of *Scab*, which, in some situations particularly, and, in general, deleteriously attacks our flocks, may (upon the principle already advanced) be prevented or considerably checked by a process similar to that practised in the human species in cow and small-pox, viz. by an inoculation with the *virus* of the disease.

Whatever cause physiologists may assign, it is an undoubted fact that infectious maladies are much less malignant and destructive in their consequences when propagated by inoculation, than when allowed to disseminate themselves by natural contagion, which is evinced by inoculated small-pox in the human species. Now, as this fact holds as well with regard to one race of animals as to another, we have thus a presumptive argument in favour of the position advanced. The experimental proof is all which is further required to satisfy us with regard to the expediency of inoculating sheep for this disease: to convince us, in the first place, that the disease is really milder when propagated in this way; and, in the second place, that the animal is not susceptible of the infection a second time. This more convincing species of demonstration I regret not having myself been able to bring forward, as the means of actual experiment have not been directly under my power. From this want of experiment I have delayed communicating these ideas to you at an earlier period, averse as your compilation professes itself to be, to mere speculation unsupported by fact; and the same consideration might have deferred them to a later period, had I not accidentally found myself anticipated in the experiment, by an individual, whose rank and situation enabling him to make it on a larger scale, rendered it consequently also the more decisive.

In the late Court Gazette from Vienna, there is the following intimation:—'Among the experiments and discoveries in rural œconomy, which, on account of their utility, deserve to be published, we mark those of the Counsellor Holsmaistre, director of the estate and domains belonging to the Imperial family. He has on his grounds more than twenty-four thousand sheep of the Spanish breed. Having lost, for some years, a great many of them,

them, by the cutaneous diſeaſe to which theſe animals are ſubjected, it occurred to him to make the experiment of inoculating them with the *virus* of the diſeaſe. The experiment has been performed ſucceſſively upon 8000 lambs and 2000 ſheep; not *one* of them has died! and there are very few of them on whom the matter has not taken. To complete this proof, Mr Holſmaiſtre has cauſed a ſecond inoculation to be made upon 1000 of theſe animals, and has mixed them with other ſheep infected with the diſeaſe. Not *one* of them took it a ſecond time!

Without conſidering the fact as completely eſtabliſhed even from this moſt reſpectable document, I only with this intimation to be the means of inducing thoſe of our own country, who have the eaſy means of putting it to the proof, to make the experiment. The inſide of the fore thigh may, perhaps, be the place beſt adapted for the inoculation.

With regard to the importance of the inoculation of ſheep, if the efficacy aſcribed to the meaſure is once eſtabliſhed, it is almoſt unneceſſary to offer a ſingle obſervation. It muſt be evident to every one, in the leaſt degree acquainted with the malignity of this cutaneous diſeaſe, and who is ſenſible that, notwithſtanding the uſual precautions of tarring and ſmearing, a whole flock (as ſometimes occurs), of the moſt healthy and promiſing appearance, may have received the taint, before the accompanying characteriſtics of the diſeaſe have rendered the infecting individual an object of ſuſpicion.

It may, however, with propriety be remarked, that as the remedies of tarring and ſmearing are not always effectual; as, in general, they are only applied when the diſeaſe has made its appearance: and as they are attended with conſiderable trouble and expence; any *modus medendi*, which has for its object the entire prevention of all thoſe inconveniences, muſt be well deſerving the attention and experiment of thoſe who are extenſively ſubjected to them; particularly ſo, when we conſider, that as all the remedies heretofore applied can only be conſidered in the light of temporary palliatives, this ſtrikes at the root of the evil, by rendering the flock inſuſceptible to future infection.

'*Nec mala vicini pecoris contagia lædent.*'

*Airſhire, March* 20. 1803. R. K.

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*Note by the Conductor.*

The above ſpeculation being ingeniouſly executed, cauſes us to give it a place, though we are by no means diſpoſed to think that a preventive is neceſſary againſt a diſorder which rarely happens among the flocks of good farmers; and, when it does happen, is ſo eaſily cured. By the very

very ſimple proceſs of applying tobacco liquor, mixed with a ſmall quantity of ſpirit of turpentine, or, what is better, the ſpirit of tar, the ſcab may be ſoon removed. Notwithſtanding it is our opinion that inoculation (granting it to be a complete preventive) is, in a great meaſure, unneceſſary; yet we will be happy to hear frequently from Mr R. K., who ſeems to poſſeſs talents for ingenious diſquiſition. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Nature, Improvement, and Qualities of the Different Soils proper for Rearing Sheep.*

## LETTER I.

SIR,

IT may perhaps not be improper to premiſe, that any knowledge I am in poſſeſſion of, was for the moſt part acquired in a diſtrict of the country where the products of ſheep are the principal, I may ſay the only ſource, from which the farmer derives his wealth; of conſequence, that the facts I advance are deduced from experience, not from theoretical ſyſtems, and will be found, for the moſt part, applicable only to ſoils where nature preſents an inſuperable barrier againſt agricultural improvements.

In moſt high-lying grounds, the ſoil may be claſſed into two diſtinct kinds; the one moſt proper for rearing, and the other for feeding. Of the kinds moſt proper for rearing, I ſhall mention, firſt, that variety known by the name of *heath* ground.

The plant, or ſhrub, called Heath, is of a dark brown colour, and puts out a great variety of branches from the ſame root, which form a thick buſhy top. It begins to vegetate about the latter end of May, or beginning of June, and in July is covered with bloſſoms of a whitiſh red colour, which emit a very fragrant ſmell. It continues to be of great uſe for food till April, when more ſucculent herbage begins to ariſe.

A dry ſoil ſeems to be moſt proper for invigorating this plant; as, there, it is always found in its moſt perfect ſtate. On a gravelly ſoil, and in a ſoutherly expoſure, it will vegetate, nay, flouriſh, where ſcarce any other herb will grow. On a gravelly ſoil, where it thrives beſt, it will ſcarcely reach a ſtate of maturity in thirty or forty years; and I am perſuaded, that where no untowardly circumſtance accelerates its decay, it will retain its vegetative powers for hundreds, perhaps thouſands of years. The greateſt height that it attains to in the ſouth of Scotland, is

is three feet above the ſurface of the ground; but it ſpreads its roots immediately below it to a greater extent.

Though there is but one ſpecies of this plant, yet its qualities vary according to the nature of the ſoil on which it grows. That on a blackiſh loam, incumbent on freeſtone or limeſtone, will, with a little mixture of graſs, feed almoſt as well as ſeveral kinds of green paſture; and that which grows on a mixture of earth and ſand (or gravel), though inferior to the former, is much better than that which is produced on a wet, ſpungy, deep moſs. The two former are called Lea-heath, and the latter Moſs-heath. Perhaps a given number of acres of green paſture will feed more ſheep than an equal number partly covered with heath; but thin land, of the laſt deſcription, poſſeſſes many advantages not to be gained from that of the former, ſuch as the following. Heath continues to grow during freſh weather in winter, when every ſpecies of graſs is decaying, or at leaſt making no advance; and, in partial thaws, the ſnow will be found melted from off it, while other paſtures continue covered; which is owing partly to its cauſtic quality, and partly to its being more expoſed to the action of the wind. In froſts, the ſheep are particularly fond of it, as its cauſticity affords an antidote to the benumbing coldneſs of the rhine; and in time of ſnow, when green paſtures are covered, it is particularly uſeful, as ſheep, by a few ſtrokes of the foot, eaſily ſhake off what is looſely ſuſpended upon its buſhy tops, and thereby get immediate acceſs to food; which not only ſaves the expence of fodder in deep ſtorms, but keeps ſheep in better condition, and renders them more capable of reſiſting the waſting influence of a ſevere ſeaſon. Heath alſo excels all other plants in producing ſound, healthy, and vigorous ſheep. In flocks, where this is a principal part of the food, the rot is never known, unleſs brought on by unſkilful management, bad ſeaſons, or ſome ſuch cauſe. But perhaps theſe advantages may be overbalanced by a farm keeping more ſheep, when turned into green paſture, than when a conſiderable part of it was heath. In making ſuch alteration, however, great regard ought to be paid to the nature of the ſoil. If it is ſuch as will produce graſs of a nutritive quality, the farmer does not conſult his intereſt in allowing it to be overrun with heath; but when it is of a contrary nature, and yields only a kind of inſipid yellow fog, the alteration ought by no means to be made, as fog is totally unfit for paſture, and, being naturally almoſt deſtitute of moiſture, ſtrongly reſiſts the penetrating power of froſt; conſequently, often hurtful, by harbouring grubs, and other deſtructive vermin. The quality of the ſoil may be known by the graſs found at the root of the

heath, though this is not always an infallible rule to judge by, as ſuch graſs, being well ſheltered from the cankering froſt winds, will be finer and thicker than when more openly expoſed; and, in ſome caſes, the heath is ſo thick and cloſe, that no graſs will be found at all. The following method for aſcertaining the quality of the ſoil, though ſlow in operation, is ſure in effect:—Burn a ſmall quantity of the heath, and in two years you will find what ſpecies of graſs the ſoil produces. If it be thick, and of a nutritive quality, it will undoubtedly be proper gradually to exſtinguiſh a certain quantity of the heath; but it is to be obſerved, that where there are many hillocks, or ſmall knows, and the heath growing on theſe only, it will be better not to burn it, as ſuch knows rarely produce any thing but the yellow fog above mentioned, whilſt they ſerve for ſhelter to ſheep in the night-time.

I come next to ſpeak of the propagation of heath, a point of no ſmall importance in ſeveral parts of the country. From its appearance in July and Auguſt, I am inclined to think that it may be raiſed from ſeed; but as this can only be done upon land previouſly prepared by tillage, and on which it would be more adviſeable to ſow ſuch of the graſſes, introduced by an enlightened ſyſtem of agriculture, as may be thought beſt adapted to the ſoil, I ſhall take no further notice of it, but only endeavour to point out ſome method of reinvigorating heath, when not totally decayed. Depaſturing it with hogs only, which is a lighter ſtock than old ſheep, has been found, from experience, to be the beſt reſtorative; as the ground deſigned for them is generally *brined* during the months of July and Auguſt, and the heath thereby allowed to bloſſom fully, after which it is not apt to be deſtroyed that ſeaſon, for, in this caſe, the ſheep eat only the green ſhoots which do not bloſſom. Hence appears the propriety of keeping old ſheep, during the bloſſoming months, from all paſtures where an increaſe of this plant is wiſhed.

I ſhall now offer a few remarks on the means uſed for rendering heath proper for food, when too old, or cankered by froſt winds, &c. which can be effected by burning only.

Moſs-heath requires to be frequently burned; perhaps burning every fourth year is not oftener than neceſſary, to render it palatable and nouriſhing: but this rotation of burning is not applicable to all heath, nor to the ſame ſpecies in every ſituation. To burn lea-heath, where it is ſcarce, and on a ground paſtured with old ſheep, is to annihilate it altogether; as this kind ſprings but ſlowly, and, being more delicate and palatable than moſs-heath, ſuffers not only from the ſheep eating it with greater avidity, but alſo from the cankering ſeverity of froſt winds.

Moſs-

Moſs-heath, on which there is much dependence in the time of ſnow, ſhould not be burned ſo often as that intended for ſummer paſture only, as it continues thin and ſhort for the firſt and ſecond ſeaſons after burning, and conſequently is not ſo able to reſiſt the preſſure of ſnow on its top, and the binding power of froſt at its root, as in a year or two thereafter.

The act for the preſervation of game prohibits burning after the 11th April, and, in ſome ſeaſons, it is impoſſible to burn any before that time; but when this can be proved to be the caſe, an indulgence ſhould be allowed, till a more advanced period of the ſeaſon. At any rate, a farmer who has much high lying coarſe ground, would do better to riſk the payment of a ſmall fine, than loſe a favourable opportunity.

I ſhould now proceed to ſtate the particular times of the year in which heath is moſt proper for the different kinds of ſheep; but this would carry me beyond a proper length, and may perhaps come more immediately under conſideration, when I ſpeak of the influence of ſoils on the conſtitution of ſheep. I am, &c.

*5th February* 1803. S. L.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Account of the Northumberland Breed of Sheep, and the progreſſive Improvements made thereupon.*

SIR,

I have often thought that an account of the old breed of Northumberland ſheep, and the progreſſive improvements that have taken place from time to time, by various croſſes, eſpecially with thoſe of the Diſhley or New Leiceſter breed, would be a deſirable paper to fill up a corner of your uſeful Miſcellany; and entertained hopes that ſome of your numerous correſpondents would take it up. Finding myſelf hitherto diſappointed, I venture (however incompetent to the undertaking) to ſend you the following ſketch, which I truſt will prove acceptable to your readers; at leaſt, it may ſerve to ſtimulate ſome abler pen to a more perfect execution of the taſk.

As far as my information reaches, the general breed of ſheep which covered the champaign parts of this county, prior to the above croſſes, were called *Mugs*; a name, deſcriptive of their nature. I remember well to have ſeen many of this breed, particularly a flock on the farm of Heatherſlaw, then in the poſſeſſion of the late Mr Ralph Compton, of Carham. Theſe ſheep arreſted my obſervation ſo forcibly at firſt ſight,

that I examined them with a very attentive and ſcrutiniz-ing eye, and found them ſo truly *mugged*, or grown with wool all over their faces, that I could ſcarcely ſee their eyes. It is difficult to account for the production of ſuch a breed, and ſtill more ſo for the preference given to it by the breeders of that period, in oppoſition to the taſte of thoſe in every other part of the iſland. Indeed, among the numerous bad breeds then to be found, and which are ſtill to be met with in various diſtricts, I do not remember to have ſeen any one ſo completely ugly. The wool grew down to their very toes; their loins were high and narrow; their ſhoulders ſharp, and hollow behind; their ſides flat; and their wool ſhort, and not at all fine. At that period (ſomething more than thirty years ago), there was not a ſingle pack of long, or combing, wool to be found in all Glendale Ward, though hundreds are now produced there.

Upon the coaſt, all the way from North Durham, ſouthward along the diſtrict called Bamburghſhire, to the extenſive pariſh of Warkworth, incluſive, long wool has been grown, I ſuppoſe, for time out of mind; and it is probable that the mugged breed had been more peculiarly confined to the low parts of Glendale and Coquetdale Wards. The coaſt breed, though far from being a valuable one, poſſeſſed many good qualities, which the mugs were deſtitute of. The former, in general, were pretty fine ſhaped ſheep, carried a nice fleece of combing wool, and had tolerably good open looks, and clean legs. Their wool was not ſo long and open as it now generally is; but was thick planted, and the filaments of finer quality. This ſuperiority was obtained by frequent croſſes with the Lincolnſhire breed; which, at that time, were of a more feeding quality, and finer wooled, than ſome years afterwards, previous to their being croſſed with the new Leiceſters. As a proof of the fineneſs of the Lincolnſhire wool at the period alluded to, I need only obſerve, that the late Mr James Robſon of Chatto, a moſt reſpectable man, and breeder of Cheviot ſheep, who then lived at Scotch Belford, purchaſed ſome tups from a Mr Mumby, near Barton upon Humber, in Lincolnſhire, who at that time ſtood high as a ram breeder. Theſe tups, without injuring the quality, greatly increaſed the quantity of the wool, and gave Mr Robſon ſuch a decided ſuperiority over his hill neighbours, that, for many years after making the croſs, he ſold more tups than one half of the hill farmers put together. Perhaps his ſons, who are very eminent breeders of Cheviot ſheep, may ſtill retain this ſuperiority; at leaſt I know nothing to the contrary.

Many

Many people alſo, upon the coaſt, about this time, particularly in the pariſh of Warkworth, got Durham or Teeſwater tups to croſs from. Probably the large ſize, and immenſe weight of this breed,* with the ſimilarity of the coaſt paſtures to thoſe by the river Tees, was the cauſe of this meaſure. From Warkworth pariſh, ſouthward to Tinemouth, and all up the Tyne to the neighbourhood of Hexham, (where the Meſſrs Bates, Joblings, and a few others, formerly kept a permanent breeding ſtock, much of the Biſhoprick or Teeſwater kind), as alſo all the way northward into Coquetdale, nothing but a running ſtock was formerly, and ſtill is, kept; that is to ſay, ewes are bought in at Michaelmas, and they and their offspring all ſold off by the Michaelmas following, or thereabouts. Two reaſons may be aſſigned for this mode of management—Firſt, The land, in general, through a great part of this extenſive tract, is not *found* or ſafe for keeping a permanent breeding ſtock: Secondly, The vicinity to Morpeth market, where amazing numbers of fat lambs are ſold through the whole of ſummer, to ſupply the immenſe conſumption of Newcaſtle, Shields, Sunderland, and all that vaſt population upon the ſides of the rivers Tyne and Wear, where the greateſt coal-works in the world are carried on. Perhaps, too, *miners*, *keelmen*, and *coalheavers*, eat more animal food, in proportion, than any other claſs of people in the iſland; and, as a proof of their ſtrength of appetite, I take the liberty to mention the following anecdote, well known in and about Newcaſtle. The keelmens' wives have long had a practice of dropping quarters of lamb, or joints of mutton, into the keels, from off the bridge at Newcaſtle, as the keel paſſes below. One of the keelmen, ſeeing his wife at her uſual ſtand, cries, '*Drop, drop, d—n you, drop, what are you about?*' The wife replies, '*The d—l choke thee, for that is the ſeventh joint this week.*'

The ſheep upon the coaſt kept gradually improving, by their croſſes with rams from Lincolnſhire and Tees ſide; but the advances ſeem to have been ſlow indeed, when compared to thoſe made in the æra of which we are now to ſpeak, as the mugs were ſtill in poſſeſſion of all the low parts of Glendale, and a conſiderable extent of the low parts of Coquetdale. About the year 1767, the Meſſrs Culleys entered upon the farm of Fenton,



* More than forty years ago, Mr Hutchinſon, of Sackburn, (a farm by the Tees ſide), bred and fed a wedder, which weighed above 60 lib. per quarter. I have loſt my memorandum; but, if I recollect right, the weight of the quarter was 62 lib. and odd ounces; which, I believe, has not yet been exceeded by any in England.

near Wooler; and introduced into this county that moſt valuable breed of ſheep, now generally known by the name of the *New Leiceſters*, though perhaps it ought rather to be called the Diſhley, or Bakewell breed, from the high merit of that extraordinary man, who was certainly the firſt perſon that made the proper diſcriminations between *ſize*, *form*, and *diſpoſition to fatten*. He firſt advanced the principle, that all *ſmall-boned animals*, even of the ſame family, have a greater propenſity to fatten early, and produce fleſh of a firmer texture and grain, than large coarſe-boned ones. This principle ſeems now to be firmly eſtabliſhed, (at leaſt I have not heard of it being controverted), and perhaps holds through all animated nature. It may be ſaid, that Mr Bakewell did not introduce a new or freſh breed from abroad, or even from any diſtant part of this iſland. It is true he did not; but he had the diſcernment to perceive, and the judgement to ſelect, a breed far ſuperior to any that were known before; a breed, that hath not ſince been equalled by any that I have heard of, though fifty years or more have elapſed ſince Mr Bakewell firſt began. It may alſo be ſaid, that the mode was eaſy and ſimple. No doubt it was; but, ſimple and eaſy as it may appear, it was reſerved for a Bakewell to hit it off.

At that period, Mr Bakewell was allowed the pick of all the principal flocks of ewes in his neighbourhood, at the rate of 20s. or 21s. per head; and when the price was afterwards advanced upon him to 42s., he gave up, as, by that time, he had poſſeſſed himſelf of the beſt ewes in that part of the kingdom. As for tups, he hired or bought them, wherever he could meet with the moſt proper for his purpoſe; and indeed I have been told, that thoſe from which he derived the moſt benefit, were from Lincolnſhire. It hath been already noticed, that, fifty or ſixty years ago, the Lincolnſhire ſheep were infinitely better than for ſeveral years afterwards, previous to their being croſſed with Bakewell's ſelection. The cauſe of their falling off was this:—An advance took place in the price of wool, which led the Lincolnſhire breeders to prefer *wool*, *ſize*, and *bone*, to that propenſity to fatten, which was the characteriſtic of the breed, and is certainly the firſt quality in all animals intended for the ſhambles. The ſame cauſe has, of late, operated, in many diſtricts, in the ſame manner; and it is not to be much wondered at; as mankind are very apt to purſue a preſent advantage, without adverting to the future loſs. *

It

* The attentive breeders of ſheep find, from repeated trials, that they cannot unite *heavy fleeces*, *much bone*, and a *diſpoſition to fatten*. It remains then to be conſidered, which are the moſt valuable.

It is not at preſent eaſy to aſcertain, whence Mr Bakewell obtained tups for croſſing his breed; but it is certain, that, in a very ſhort time, he produced, at the different fairs and markets, (as was then cuſtomary), animals of this deſcription, far ſuperior to thoſe exhibited by any other breeder. He has been often heard to ſay, that the firſt three tups he ever let did not bring him 20s. a piece. What a ſmall beginning this, for the very man who afterwards made above a thouſand guineas yearly by one ſheep, and taught us to raiſe two pounds of mutton, where only one could be raiſed before! The *form*, *fine proportions*, and *beautiful looks* of this moſt valuable breed, and, above all, their uncommon tendency to get fat, are circumſtances ſo well known to every one verſant in the breeding line, that it is unneceſſary to ſay more on the ſubject. Thoſe who wiſh to inveſtigate their merits more fully, may conſult Mr Culley's Treatiſe on Live Stock.

I have already obſerved, that the Meſſrs Culleys entered upon Fenton farm about the year 1767. Some years prior to their fixing in Glendale Ward, they had let a few tups in Northumberland. Mr Thompſon, late of Chillingham Barns, then of Eaſt Lilburn, father to the preſent Mr Robert Thompſon, was one of thoſe who firſt hired tups of them, and continued a conſtant cuſtomer for ſeveral years. Meſſrs Cleaver and Kendal, a conſiderable time after the Culleys had ſettled in Northumberland, brought a quantity of tups from the edge of the Yorkſhire Wolds, to Morpeth, for the purpoſe of ſelling or letting. They were of the coarſe Lincolnſhire breed. *Large heads*, *great bones*, and a vaſt deal of curled ſhaggy wool, were the diſtinguiſhing characteriſtics of theſe tups.* Novelty, however, or the benefit expected to ariſe from ſuch a complete *croſs*, induced great numbers, (amongſt the reſt, that zealous and ſpirited breeder Mr Thompſon), to try this new kind of ſheep. Indeed, the rage for theſe novel animals was ſo great, that the Culleys did not let tups that ſeaſon to the amount of 50l. Sterling. Mr Thompſon, however, ſoon found his miſtake; for, though he and a Mr Marſhall took a tup of Meſſrs Cleaver and Kendal, for two years, he did not uſe him the ſecond ſeaſon; on the contrary, he declared he would get rid of the kind as faſt as he could.



* I have been told, that notwithſtanding theſe Yorkſhire tups were ſhewn very lean, and the Culleys, on the ſame day, planted a pen of very fat ones at Morpeth, yet they could not let or ſell a ſingle tup, while all the Yorkſhire ones were ſoon let or ſold. So much for novelty, new faſhions, or what you pleaſe to call it!

Whether this saying of Mr Thompson, or what else was the cause, it is not easy to find out, at this distance of time; but the fact is, that, though these gentlemen came to Northumberland next season, in great hopes and expectation of doing more business than they did the year before, they disposed of but few very tups at Morpeth; and, after hawking the remainder from place to place, sold the last ten (or such like number) at St Ninians fair, for some two or three guineas a piece. This not only finished their career in Northumberland, but was the real mean of stamping the value, and establishing the merit of the Bakewell blood against all opposition. The Culleys had now all the trade, and certainly thereby benefited not only themselves, but the country at large. It may be proper to notice, that, at this time, there was a set of leading breeders, in different parts of the county, who, either from *pride* or *obstinacy*, would not allow merit to the Bakewell blood, and, for a number of years, threw cold water on this valuable breed. Nay, they were weak enough to say, when they found that the Culleys shewed their shearings or dinmonds, at Morpeth, year after year, in better condition than any others presented, that this was not owing to the nature of the breed, but to some art or secret in feeding, unknown to other people, which they, the Culleys, were in possession of. Thus would they allow merit to the breeder, but not to the sheep. A Mr Lamb, however, who at that time was agent to the late Sir Thomas Haggerstone, of Haggerstone, and rented some of his capital grazing ground, asserted one day in the public market, 'that this new breed must be of a more feeding nature than any other; otherwise, it was impossible that the Culleys, or any man whatever, could shew fatter sheep than he could: but that, though he had much better land than them, a breed of sheep hitherto accounted one of the best in the county, and his pastures lightly stocked, yet he could not compete, in point of fatness, with those of the new Leicester breed.' Mr Lamb being an active clever man, whose opinion was much valued by the neighbourhood, this change of sentiment with him had a wonderful effect. He hired some tups about this time from the Culleys, which confirmed his ideas as to the propriety of the change; but the matter which had the greatest effect was, that Mr Taylor, one of the most extensive breeders and graziers in the county, and whose abilities were generally respected, hired tups both from the Messrs Culleys, and Mr Thompson, who had now commenced tup-letter, which occasioned this breed to be generally disseminated throughout the whole county, and all the low part of Berwickshire, to the Lammermuir Hills. Some purse-proud obstinate breeders continued,

tinued, however, in the old beaten path, at leaſt they pretended to do ſo. But their oppoſition did little harm; as it was generally known, that, notwithſtanding they would not hire tups from the profeſſed letters of the new Leiceſters, yet, that they eagerly bought tups, with a daſh of the blood, from others, wherever they could procure them. It may be remarked, that Mr Gregſon, of Lawlynn, who was at one time extremely averſe to the Leiceſters, has now ſeen his error, and hires tups every year from the Meſſrs Culleys, at very genteel prices for a grazier. A miſtaken idea, which long prevailed, contributed to prevent a general improvement. This was owing to many breeders ſuppoſing that one croſs was ſufficient to make a complete breed, not conſidering, that, if the kind is good, you cannot have too much of it. There is no doubt but that the firſt croſs has always the greateſt effect; but it requires the greateſt perſeverance to prevent even a partial degeneracy. It is now well underſtood, that no breed can be brought to any conſiderable degree of perfection, without ſeveral croſſes or intermixtures with the moſt valuable blood. At this time, indeed, it is comparatively an eaſy matter to get into a good breed, with what it was twenty years ago; becauſe the Bakewell blood is in general circulation. Ewes of a pretty good form may now be purchaſed at all the fairs, or by riding the country; and, if a good tup is hired from one of the leading breeders, you get at once into a real feeding kind, and at no great expence; but, if determined to commence tup-letter, a perſon muſt go to the firſt-rate breeders, and purchaſe their caſt ewes, at ſuch a price as they will ſell them at; for they will not part with their beſt ſort at any price which it would be worth the while of a beginner to give.

Before finiſhing this part of the ſubject, it may be proper to obſerve, that Mr William Charge, late of Cleuſley, on the Yorkſhire ſide of the Tees, brought tups, of the Diſhley or new Leiceſter breed, to Morpeth, before the Culleys brought any, and ſold them there at no great prices. Mr Henry Grey, of Bamburgh, and ſeveral others, who were in poſſeſſion of the large improved breed of Bamburghſhire, bought ſome of theſe tups, and were wonderfully benefited by them; but, for want of knowledge in not continuing that blood, and croſſing them again with the large Tees-water breed, they ſoon loſt the benefit of the firſt valuable mixture. *

It

* A younger brother of Mr William Charge's had, it ſeems, got acquainted with Mr Bakewell, at an earlier period than the Culleys, and by that means firſt introduced the Diſhley blood into the Tees ſide; but that

It may alſo be obſerved, that the ſuperiority of the Diſhley blood was early found out by all the ſheep-breeders who were open to conviction, both in Northumberland and the Scotiſh Borders; that the breed ſpread in thoſe diſtricts, with a rapidity which has not perhaps been equalled in any other part of the iſland; and does high credit to the candour of the Border breeders in general. They ſoon diſcovered that they clipped more wool, and of a better quality, from ſheep of this breed, than from the mugs; though, indeed, they are not remarkable in this reſpect, when compared with the Tees-water, and more particularly with the old Lincolnſhire breed, which laſt excels every other kind we know of, in quantity of wool *. The diſtinguiſhing quality of the Diſhley breed, and that which gives it the preference to all others in the iſland, is a wonderful propenſity to fatten in a ſhort time. Sheep of this kind, are found fatter at the age of two years, than thoſe of the Lincolnſhire, or any other breed, when three years old. Nay, many of them are ſold at the end of fifteen months, at from 45s. to 60s. *per* head, and are conſidered by moſt people as then fat enough for uſe. The keelmen, pitmen, and all ſuch hard-working people, however, like better to have them a year older; and they are never too fat for people of theſe deſcriptions.

The period ſeems to be at no great diſtance, when all, or the greateſt part of the champaign diſtricts in the iſland will be ſtocked with this invaluable breed. The ſouthern parts of England, however, where the farmers are weak enough to perſuade themſelves that good grain crops cannot be raiſed without *ſheep-folding*, will be the longeſt in adopting the breed, or rather the lateſt in ſeeing their error. All, or moſt of the midland, and the whole of the northern parts, are covered with theſe ſheep, or at leaſt with an intermixture of the blood. Croſſes have alſo been tried in the Hill diſtricts, and the breed ſeems to be

that young man having died, his elder brother Mr William, by croſſing the Diſhley blood again with the large Tees-water breed, loſt, or very much contaminated, the valuable kind which his younger brother had been at the pains and expence of introducing. This gave the Culleys a decided advantage; as they had purſued the Diſhley blood, with zeal and energy, from their firſt ſtarting.

* We are well informed, that many of the Lincolnſhire breeders uſed formerly to clip 12 pounds per fleece, or more, over their whole flocks of ewe, wedder, and hog; an amazing quantity indeed, and may perhaps tempt ſome, at this time, to aim at an increaſe of the quantity of this article, which at preſent ſells from 12d. to 14d. per lib. and upwards.

be faſt creeping up the edge of the mountains. In Lincolnſhire, it was longer of being adopted than in any other of the midland or northern counties; and probably for the following reaſon. In no part of England, that we are acquainted with, are there ſo many rich extenſive marſhes, and other good lands, as in Lincolnſhire, Romney marſh excepted, which, comparatively ſpeaking, is but a ſpot. As ſuch rich lands force the wool to an extraordinary *length*, *ſtrength*, and *weight*; it is reaſonable to ſuppoſe, that this conſideration at firſt induced the breeders to purſue *wool* and *ſize* particularly, and to ſtick to the practice longer than their brethren in the other long-wooled ſheep-breeding diſtricts *. It is ſuppoſed, however, that a ſingle ſheep of the pure old Lincolnſhire ſtock, is not now to be met with, except, perhaps, beyond the Waſh, or in the Seven towns of Norfolk; and that one of the *pure uncontaminated* old Teeſe-water blood is no where to be found.

To conclude, it is now admitted on all hands, that the Diſhley ſheep pay more for what they eat, than thoſe of any other kind we know of. I think Mr G. Culley, in his treatiſe on live ſtock, ſays, that in his opinion, they pay 4d. *per* week, while moſt others pay only 3d., or in that proportion. It is to be regretted that the idea of experimental farms was not carried into execution, as, in that caſe, numerous experiments would undoubtedly have been tried, in ſuch a manner as to throw more light upon a ſubject of ſo much importance, and would, no doubt, in time, have produced deciſive proofs. Whether the Board of Agriculture, or any other inſtitution, will, at a future period, revive theſe matters, is perhaps more to be wiſhed for, than expected; but, without deciſive experiments, we muſt remain as we are, each attached to his own opinion. The ſpreading of theſe ſheep, however, in all directions, is a ſtrong preſumptive proof of their high merit, and clearly ſhews that they are preferred to all others in the champaign parts of the iſland. They have long occupied the beſt lands of Berwickſhire, and are now bred, in general, to the very extent of the beautiful vale of Tiviotdale. Several tups have been let into the Lothians, and

* Mr George Culley, in his Treatiſe on Live Stock, ſays, that, in the neighbourhood of Boſton, in Lincolnſhire, many of the marſhes keep from twelve to ſixteen ſheep, and half a beaſt, per acre: that, before Long-Sutton common was enclоſed, it was always calculated that not fewer than ten or twelve ſheep were kept upon each acre, beſides cattle and young horſes in the ſummer months; and that the beſt and fatteſt hogs were always depaſtured there, as lean ones could not bear the richneſs of the graſs.

and acroſs the Frith of Forth into Perthſhire, &c. &c. Trials are alſo making of them in Cumberland, and on the Solway Frith; and it is not doubted, but that they will find their way gradually into the remoter parts of Scotland, wherever the ground will ſuit them.

Thus have I endeavoured to give the beſt account which I have been able to collect, of the progreſſive improvements in the breed of Northumberland ſheep; and if you think the attempt worthy of a place in your Magazine, it is much at your ſervice. I remain your conſtant reader,

A NORTHUMBERLAND FARMER.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Improvement of Holm Land in Cumberland.*

SIR,

A great improvement being lately made on a tract of fine holm land in our neighbourhood, by cutting a new water-courſe, and raiſing a ſtrong bulwark, to turn the river out of the old channel, an account of it cannot be unacceptable to your numerous readers; and, though not an undertaking of ſuch magnitude as the drainage of Loch Leuchars, which you have given an account of in your November Number, yet is as much within the ſphere of the practical farmer; eſpecially as many fine tracts of holm land are often of little value, for want of ſuch improvement.

The holm alluded to, is in the north-eaſt diſtrict of Cumberland, a few miles from the ſource of the river Line, (a river that diſcharges itſelf into the Solway Frith near Longtown); and, owing to the rapidity of the river, and the torrents from the mountains, it was rendered almoſt uſeleſs; the river having formed itſelf a ſerpentine courſe, (as in Fig. 1. of the ſketch annexed), tearing its loamy banks, and inundating nearly 8 or 10 acres of fine land every flood. About ſix years ſince, Mr Nixon, the proprietor, ſet about its improvement, which he completely effected, by cutting a ſtraight courſe down the north ſide of the holm, thereby ſhortening its courſe from 800 to 500 yards. But the greateſt difficulty was, the making a bank to turn the river into the new cut, as it was neceſſary to make it acroſs a rapid ſtream, where the river was about 25 yards broad, with a looſe gravelly bottom. Mr Nixon preferred a bank of ſtones, backed with gravel. He got large ſtones from a quarry at a ſhort diſtance, and begun the bank, by laying the foundation ſtones about a foot and a half ſunk in the gravel, which was carried up (rather ſloping it a little) to the height of 7 feet, not like a double

double wall, but only as a kind of rough facing, without uſing any lime, and ſupporting the back of the ſtones with gravel from the old water-courſe, beginning the mound of gravel about 4½ yards, or near 5 yards, wide at bottom, and ſloping it gradually to the top, and covering it with green turf, to give it a ſward; ſecuring it in front with a row of ſtrong oak ſtakes, drove near 3 feet into the gravel, and about 3 feet diſtant from the ſtone facing, and filled with ſtones in front of the bank. This was thought ſufficient to prevent its undermining; but the firſt high flood tore up the ſtakes, undermined the ſtone facing, and, in a few minutes, laid the bank in ruins. Mr Nixon immediately began a new bank, on the ſame plan as the firſt; but, inſtead of 25 yards in length, was obliged to make it above 50 yards, owing to the flood tearing the upper part of the new cut, and getting into the old channel. When it was finiſhed, inſtead of ſtakes, as before, it was ſecured by a kind of pavement of large maſſy ſtones, extending about 5 yards along the front of the bank. The moſt rapid flood cannot now undermine the bank, its fury being ſpent, by running ſmoothly on the top of the pavement, as if on a ſolid rock. The bank and pavement have ſtood more than five years, and braved the fury of the greateſt floods. I am certain a bank of this conſtruction will turn the largeſt river in Britain, if raiſed above high flood-mark, as this is. The river, now having a ſtraight deep bed, never inundates the holm as formerly; ſo it can be cropped with ſafety, beſides the gaining a conſiderable quantity of land, by ſhortening its ſerpentine courſe. The expence of the whole was not extraordinary high; as the new cut, in ſome places, fell into the bounds of the old water-courſe, (ſee fig. 1.), and the cuts, though not wide at firſt, were ſoon made large enough by the floods; no wood being to purchaſe for the ſtrong bank, and the ſtones and gravel being near at hand. The preſent farmer, Mr Henry Ewart, is at this time making great improvement on the holm, levelling the banks of the old courſe, taking ſoil to the gravelly places, &c. I have been particular in this detail; as I have ſeen ſome unſucceſsful attempts of the kind. An expenſive cut at Lauriſton, pariſh of Caſtletown, county of Roxburgh, failed, merely for want of a proper bank at its inlet; alſo, a ſhort cut, with a bank croſs the river Irthin, in Cumberland, done at a great expence, by the county, to prevent the water breaking a new courſe at the end of a bridge, is now faſt going to ruin, though the bank was made with ſtakes armed with iron, and drove ſome inches into a ſolid rock. I am of opinion, if theſe banks had been done upon the ſame principles as Mr Nixon's, they would have ſtood for ages. I am yours, &c. J. D.

*Deſcription*

*Deſcription of the Sketch annexed.*

Fig. 1. B B, is the new cut; D D D D, the old bed of the river; and C, the bank which turns the river into the new cut.

Fig. 2. a ſection of the bank. A, the cauſeway before the bank; B, the ſtone facing which ſuſtains the looſe gravel C; D, a coating of ſods or green turf.

Fig. 3. A plan of the bank; the ſpace E E repreſents the old courſe of the river; F, that part of one ſide of the entry into the old bed, which was carried away when the firſt conſtructed bank was ruined by the flood; G, the bank itſelf; and H, the cauſeway before it.

*Fig.* 1.

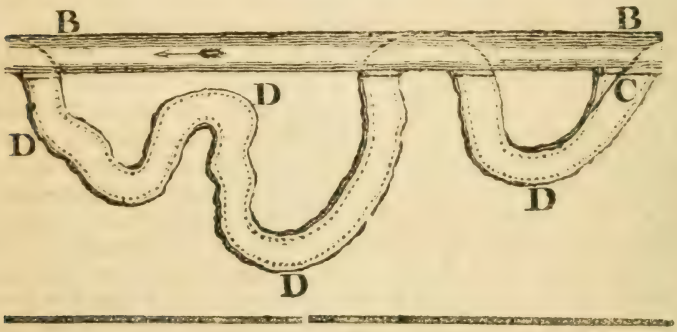
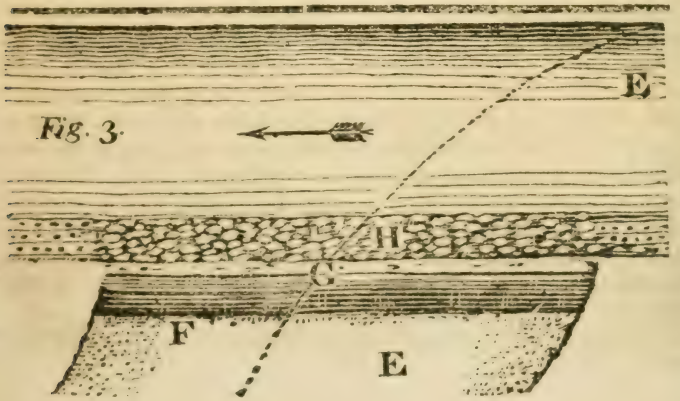



*Fig.* 2.

*Fig.* 3.



TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*The Highland Society Vindicated.*

SIR,

THE extenſive circulation of your uſeful Work, whilſt it ſpreads wide and important information, relative to the beſt intereſts of our country, may occaſionally be the means of diſſeminating error. It becomes, therefore, the duty of your readers to enable you to correct any miſtake, in point of fact, which, through inadvertency or otherwiſe, may have crept into your Magazine. In this view, I think it right to inform you, that Mr Dempſter, in the very excellent letter to you, publiſhed in your laſt Number, is inaccurate, when he ſtates, that the important ſubject of Emigration has eſcaped the attention of the Highland Society of Scotland. Had this been the caſe, that Society would indeed have had little claim to the patronage and ſupport it expects from the public. But, ſo far from having overlooked a circumſtance ſo intereſting to the feelings of their countrymen, and ſo connected with the well-being of the State, as the emigrations from the Highlands of Scotland, the truth is, that the ſubject was early taken up, and carefully inveſtigated. Nor were the labours of the Society in vain. The Report tranſmitted to Government by the Directors, at the deſire of the Society, was laid before the Committee of the Houſe of Commons, and is expreſsly ſtated in their Report as forming one of the principal grounds on which the reſolutions of that Committee were founded.

I have no doubt, Sir, but your enlightened and worthy correſpondent Mr Dempſter, who adds by his name much reſpectability to the liſt of members of the Highland Society, will be happy to find that he has been miſtaken in this point. Nay, may I not hope, that he, and my countrymen in general, will be diſpoſed to give the Society more of their confidence, and believe, that, even when the public know it not, the Society are anxiouſly watching over the intereſts of their country, preſerving that ſilence, on queſtions of delicate diſcuſſion, which evinces a greater deſire to do good, than to receive the praiſe of doing it. I am, Sir, your moſt obedient ſervant,

*Edinburgh, 9. June* 1803. C.

BRANCH

# BRANCH II.

## REVIEW OF AGRICULTURAL PUBLICATIONS.

*General View of the Agriculture of the Counties of Roxburgh and Selkirk, with Obſervations on the Means of their Improvement. Drawn up, for the conſideration of the Board of Agriculture, by Robert Douglas, D. D. Miniſter of Galaſhiels.* 8vo. 378 *pp. Publiſhed* 1798.

We lament that this intereſting work has ſo long eſcaped our notice; as, from the Reverend author's well known accuracy, and talent for extenſive, minute, and diſcriminating inveſtigation, we might well have expected much uſeful information from the reſult of his labours. Thoſe who, like us, indulged ſuch expectations, will not be diſappointed. Indeed, we are extremely happy to find, that the buſineſs of reporting the ſtate of ſo important a Scots county was committed to his management: For though, in conſequence of the greater proportion of improveable and improved ſoil which Berwickſhire contains, that county is by ſome people conſidered as the pattern county of Scotland; yet, there is every reaſon to believe, that, in the introduction and the general adoption of improved huſbandry, the county of Roxburgh had taken the lead, of which the following is an inſtance.

In page 90th, we are informed, that, though fifty years ago, attempts were made to raiſe turnips, the cultivation of that root was relinquiſhed, from the ignorance of both maſters and ſervants as to the proper mode of managing it, and the impoſſibility of preſerving from depredation, a production then ſo rare and curious; and that the practice was not reſumed, till again introduced, in full perfection of management, about the year 1755, by Mr William Dawſon, upon his return from England, where he had reſided ſeveral years, for the purpoſe of agricultural inſtruction. The farm at that time in his poſſeſſion, not being of a ſoil favourable to this crop, he ſuſpended for a while his operations. About the year 1759, he entered into poſſeſſion of the farm of Frogden, of a ſoil more propitious; when he immediately reſumed the cultivation of turnip, with ſuch ſpirit, as to have from 80 to 100 acres annually under this crop. The celerity with which his cattle fattened, with the large command

mand of dung obtained, ſoon recommended his ſyſtem of practice to the imitation of thoſe in his neighbourhood. 'But ſo ſlow has been its progreſs (ſays our author), that, during twenty years, it ſcarcely ſpread as many miles; and at this moment, after the experience of thirty-ſix years, it only begins to be practiſed in ſome diſtant parts of the county.' In a note (p. 69.), the introduction, into Scotland, of the practice of ploughing with two horſes abreaſt, without a driver, ſeems to be attributed to Mr Dawſon. 'When Mr Dawſon at Frogden firſt introduced the drill-huſbandry, he had great difficulty to teach a ploughman to manage two horſes without a driver, and to make ſtraight furrows. Mr James MacDougal, now tenant in the pariſh of Linton in Tweeddale, was the firſt who learned to plough in this manner; *and from him the practice ſpread through this county, and the neighbouring ones of Northumberland, Berwickſhire, Eaſt-Lothian, and Tweeddale.*'

The early introduction, and conſequent long continued practice of the improved huſbandry, in this diſtrict, together with our perfect dependence upon the author's accuracy in the inveſtigation of facts, in ſo far as they are capable of being aſcertained, will, we hope, juſtify us, in giving as large an analyſis of the contents of this ſurvey as our limits will permit.

Both counties are deſtitute of coal, excepting a detached corner of Roxburgh, named Liddeſdale, inacceſſible for want of roads: of courſe, their ſituation is unfavourable to manufactures. The chief manufacture is one of cloth at Galaſhiels, ſituated upon that extremity of the two counties which is moſt acceſſible to the coal of Mid-Lothian. There, manufacture has ſo much increaſed, that, from 722 ſtones of wool in 1775, the quantity manufactured had increaſed to 2916 ſtones in 1790. We believe the quantity has rapidly increaſed ſince the date of the report; ſubſequent to which, we underſtand that the manufacturers have obtained the accommodation of the eſtabliſhment of a branch of the Leith Bank at Galaſhiels. But, though this diſtrict may be conſidered as agricultural, much more than manufacturing, the value of lands, we find, has rapidly increaſed, by conſequence of agricultural improvement alone. Inſtances are given (p. 16.) of great advances in the purchaſe price of landed eſtates, ſold and reſold at no diſtant periods; of one in particular, ſold ſo late as 1778, which fetched double the purchaſe-money upon being reſold in 1794.

The general dip of both counties is to the eaſt; the waters falling into the river Tweed, being diſcharged into the Eaſtern ſea; but in the detached corner of Roxburgh, where there is coal, they run weſtward, and are carried into the Weſt-

ern ocean. Selkirk lies along the weſt ſide of Roxburgh, nearer the ſources of the waters, and in a higher elevation.

SELKIRK.

The loweſt arable land in this county will be about 300 feet of elevation above ſea level. Many habitations are ſituated in the elevation of from 600 to 1000 feet. The heights of various mountains are mentioned, extending from 2000 to 2370 feet above ſea level. The harveſt is from a fortnight to three weeks later than in the lower parts of Roxburgh; though partial inſtances occur of greater earlineſs, occaſioned by reverberation of the ſun's rays from the mountains, in particular ſituations.

This county contains about 160,000 acres Engliſh of ſurface, of which about 8800 are arable, and generally of a light kindly turnip ſoil. The remaining 151,200 are ſheep paſture; moſtly green, a ſmall part of it being covered with heath. The real rent of Selkirk (eſtimating the paſture at 2s. 9d. per acre, and the arable at 10s., and making an allowance for wood, &c.) is ſtated at 28,450l.

The one third of the ſheep kept are of the ſhort-bodied, black-faced, coarſe-wooled kinds; which our author juſtly celebrates, as highly adapted for coarſer paſture, from their hardineſs and ſuperior kindlineſs in feeding. The other two thirds are of a ſpecies finer wooled, procured from the black-faced, which had been the original occupants, by repeated croſſings with Cheviot rams. This kind our author conſiders as very far from equal to the true Cheviot breed. This mode of changing the breed is undoubtedly the moſt cautious and ſafe; yet our author ſpecifies ſome bold attempts made, of introducing a whole ſtock at once from Cheviot, which had apparently ſucceeded. Upon a calculation, the *data* of which were furniſhed by ſome of the moſt intelligent of the farmers, ſheep paſture may be divided, according to quality, into nearly three equal parts; of which a portion of 50,000 acres will maintain at the rate of nearly one ſheep upon two acres; another portion of 49,000, at the rate of four ſheep to five acres; and another of 49,000, at the rate of one ſheep to one acre;—our author computes the number of ſheep in this county at 118,000: of which the annual produce, diſpoſable for internal conſumpt, or for market, he rates at 9800 ewes, or other old ſheep, and 56,200 lambs.

The ſtock of black cattle is computed at 2200; of which the diſpoſable produce, moſtly ſold lean, is eſtimated at a ſixth part, or 360.

The ſmallneſs of the proportion of arable land precludes the poſſibility of fattening any great proportion of ſheep, upon improved

improved paſture, or winter green crops; and probably the whole arable might, with propriety, be made ſubſervient to the mere purpoſe of ſecuring the holding ſtock from deficiency of food in the winter ſeaſon. It is conſiſtent with our own knowledge, that ſome farmers propoſe keeping their whole arable in alternate rotation of oats and turnip; to ſtore up their turnip, and ſupport their holding ſtock with them, in winter ſtorms, as preferable to hay. *

No limeſtone has ever been diſcovered in this county. It enjoys, however, the advantage of ſhell-marl, as a mean of improvement.

The author ſtates ſome curious facts, and ingenious ſuggeſtions, as to the origin of this ſpecies of manure, (p. 11. & 232, &c.) Shell-marl is pronounced to be a collection of a ſpecies of freſh-water ſnails, which, in the rudiments of their organization, adhere to ſtones in various rills of water; the animal and its ſhell both gradually attaining to their perfect ſtate of formation. When perfected, the ſhell, containing its animal, is detached from the ſtone, and they are carried by the rills to the moſſes into which theſe diſcharge themſelves; where, the water becoming ſtagnant, the ſhells ſubſide, and gradually accumulate into thick beds or *ſtrata* of marl. The marl may be therefore conſidered as a compound of the calcareous matter of the ſhells, mixed with the animal matter of its formerly living inhabitant, together with alluvial mud, and the moſſy matter of the aquatic plants, ſucceſſively growing and decaying, in the ſtagnant water. Some ingenious queries are ſuggeſted. Is the ſhell formed from an elective attraction betwixt the body of the animal and calcareous matter previouſly ſubſiſting in the water of the rills?—But there is no veſtige of limeſtone near the places where the marl is found, to ſup-



* A young farmer from Selkirkſhire was lately with us, who poſſeſſes a wild farm in that county. He ſtated, that his proportion of arable to ſheep walks was inconſiderable; that he raiſed few oats, except what was neceſſary for ſupporting his horſes, and paying livery meal to his herds. A plan of improvement, very ſuitable to farms ſo circumſtanced, was propoſed by him, viz. to crop the arable land with oats and turnip alternately. A pound weight of hay *per diem* being the allowance given to the ſheep during a winter ſtorm, he ſuppoſed that a turnip of 6 lib. would be better than 1 lib. of hay; and as it is a very moderate computation to have turnip of ſix pound weight on a ſquare yard, or 5760 times that quantity on an acre; of courſe it might be inferred, that an acre of turnips would go much farther in ſupporting ſheep, than an acre of hay. Doubts, however, may be entertained, whether the rotation would anſwer, if perſevered in for any conſiderable number of years; but if freſh ground was conſtantly brought in, the advantage would be great.

ply calcareous matter to the water. Or is it a proceſs of tranſmutation of ſome diſſimilar ſubſtance, effected by the animal powers of the ſnail?—But ſtones are found, without an animal adhering to them, and yet enveloped with gelatinous or cruſtaceous matter, ſimilar to the ſhell of the animal in its various ſtages of formation and growth. Is the compoſing matter of the ſhell, then, formed in the water, in readineſs to attach itſelf, indiſcriminately, either to the body of the animal or to the ſtones? or is what is attached to the ſtones to be conſidered as a ſuperplus formed by animal action, above what is neceſſary to the encruſtation of the animal?

## Roxburgh.

This Border county contains 430,080 acres Engliſh; of which three fifths, or 288,098 is ſheep paſture; and two fifths, or 172,032 are arable. Some hills, in the mountainous parts, extend to 2000 feet above ſea level; the loweſt of the arable exceeds not 90 feet of elevation. Harveſt, in the loweſt parts, has been known to commence in the end of July, though ſeldom general till the middle of Auguſt. About two thirds of the arable land is of light dry ſoil; the other third of heavy clay, of which a conſiderable part is cold, wet, ſhallow, and unfertile. The dry light ſoil is generally found in the vallies, along the beds of the rivers and rivulets; the heavy is found in a higher elevation. Moſt of the paſture land is green, and only a very ſmall proportion covered with heath.

The real rent of Roxburgh (eſtimating the paſture at 3s. per acre, and the arable at 15s.) is rated at 171,941l.

Sheep are the ſtaple produce of this county, as well as of Selkirk. From a medium calculation of the ſheep paſture (at the rate of allotment of from $1\frac{1}{4}$ to $1\frac{1}{3}$ acres to one ſheep), the quantity of ſheep kept are eſtimated at 200,000; the diſpoſable produce of which, for foreign or home conſumption, are eſtimated at 56,000 old ſheep, and 14,000 lambs, and 25,000 ſtones of wool.

There are five or ſix ſmall flocks of the Diſhley breed, kept in rich incloſures, in the arable diſtrict. But the kind generally prevalent is the Cheviot breed: theſe, 40 years ago, would appear to have been improved by an importation of rams from Lincolnſhire, before the breed of that county had degenerated. Various croſſes of the native breed are attempted, to improve, ſtill farther, the native fineneſs of their wool, and to remedy their defect of ſhape, the low and thin fore-quarters: this is attempted by rams of the South-Down or Hereford breeds, or thoſe with a daſh of Spaniſh blood in them.

Much

Much time, as well as care and attention, are neceſſary to carry theſe experiments to a concluſive reſult; but we are happy to be informed, that they are carried on with ſpirit.

More of black cattle, and perhaps of ſheep, would ſeem to be bought in and fattened, on the improved paſtures and winter crops of the arable parts of the county, than what can be afforded from the diſpoſable produce of the paſture diſtrict.

The proportions of the different breeds of ſheep, which an acre of improved paſture will fatten, are ſtated as follows:—Of the Diſhley, three ewes with four lambs, *i. e.* one of the three ewes being ſuppoſed, on average, to have twins—of the Cheviot, four ewes with their lambs—of the black-faced five ewes, with their lambs. Theſe will yield, reſpectively, above the price at which they were bought in, Diſhley, 2l. 15s. 6d. *per* acre, Cheviot, 2l. 2s., Black-faced, 1l. 17s. 6d. The author, however, obſerves, that the whole profit of the black-faced does not appear in this ſtatement; inaſmuch as, from their more kindly feeding, they can be earlier ſold, and the graſs cleared for the reception of a new ſtock. A certain proportion of the black-faced breed is generally to be found in gentlemens incloſures, for family uſe; being preferred for the delicacy of their mutton.

After conſiderable diſcuſſion as to the mode of changing breeds—whether, by ſelecting merely the beſt of the natives to breed from, in which there is no riſk—or by croſſing merely with foreign rams, which is ſafe, as the progeny are habituated to the ſituation from infancy—or introducing an entire foreign ſtock, with diſcrepant habits, which is moſt hazardous; our author ſeems not to have ſeen reaſon to adopt any general concluſion, farther than 'that very much may be done by judicious croſſes, and that a good deal alſo depends on ſoil and climate. Whether any alterations in theſe, produced by drains or plantations, will prove more favourable to one breed than to others, or prevent or leſſen the tendency of particular breeds to degenerate in certain ſituations, remains yet to be aſcertained.' (p. 173).

About 2000 calves may be fattened in this county, annually, for Kelſo and Jedburgh markets; this being a more profitable mode of diſpoſing of milk, than the making of cheeſe and butter: And about 6000 black cattle may be fattened on graſs, and an equal number upon turnips, for theſe and other markets. The cattle, ſtall fed upon turnips, are ſo bound to their ſtalls, as to hinder them from raiſing their heads above the level of their bodies, to prevent their choaking; in this way, the turnip cannot be forced into the throat, in deſcending, by its own weight,

but merely by the force applied to it by the muſcles of deglutition. They are often faſtened by the horns, which has the further effect of preventing them from licking their own bodies; which, both poiſons the ſtomach by the hairs ſwallowed, and bruiſes and diſcolours (it is ſaid) the fleſh of the part licked.

The rate of manuring with dung being at about 20 to 24 cart loads of 15 or 16 cwt. each *per* acre; and the produce of dung, yielded from an acre of turnips conſumed by ſtall-fed cattle, upon an average of all the turnip crops, good and bad, being about 10 ſuch cart loads; every two acres of turnip ſhould yield dung for one acre. Twenty-four tons of turnip are ſtated as a large average produce for an acre; and $2\frac{1}{2}$ cwt. as ſufficient *per diem* for a moderate ſized bullock that may feed to 45 ſtones Dutch weight. (p. 94).

The rate of fattening, in black cattle ſtall fed or turnip, is ſtated at an increaſe of one fourth of their weight in four or five months. (p. 147).

More command of dung is obtained by conſuming the turnip in the houſe, than upon the field; nevertheleſs, from the advantage of leſs labour, it is becoming more general to conſume them on the field, by ſheep confined in hurdles; and a commerce is carried on betwixt the farmers of the paſturing and arable diſtricts, the former often purchaſing fields from the latter, to be ſo conſumed, in fattening their diſpoſable produce, or keeping on their breeding or holding ſtock. Leſt, however, the ſuperabundant dunging, thus given to the turnip field, ſhould render the ſubſequent crop too luxuriant, whilſt the other fields ſhould ſuffer by the obſtruction, it is coming into practice to pull a part of the rows of turnips for ſtall-feeding, and alternately to leave other rows ſtanding, to be conſumed upon the field.

Marl was firſt applied, as a manure, in Roxburgh, by Lord Minto, as a proprietor, and by Mr Dawſon, as a farmer, about the year 1753; the former uſing his own ſhell marl, which was not then to be had for ſale, and the latter clay marl; the former at the rate of 30 carts, the latter at the rate of 330 carts *per* acre. So ſoon as roads of communication were opened, lime immediately ſuperſeded the uſe of clay marl (of which ſuch enormous quantities needed to be applied); though the county yields no lime, and the diſtance to it extends from 16 to 30 miles. Since the year 1772, ſhell marl has been expoſed to public ſale; and ſince it was thus procurable by farmers at large, its application is becoming more general. From 20 to 25 carts, ſuch as already ſpecified, are given to the acre, of this ſhell marl, in a dry ſtate; it loſes, in drying, a fifth of its bulk wet from

from the pit. The effects of marl are obſerved to be, not immediate, but laſting: crops from marl are a fortnight later in ripening than thoſe from lime, and the grain of leſs weight by 1-10th, in equal meaſure.

Lime is rather preferred even to ſhell marl, its quicker operation ſuiting better with the ſhort tenure of a tenant's poſſeſſion. It is applied at the rate of ſix carts to the acre, in light ſoils; and of eight, ten, or ſometimes ſixteen, in clay ſoils.

Fallow, with marl or lime, either with or without dung; and either complete, or with a green crop, is the fundamental dreſſing, depended upon, to ſecure the ſubſequent crops, in the courſe of rotation, upon the arable lands. Entire fallow is uſed upon clay, which is a ſoil unfit for turnip crops. The moſt approved ſucceſſion by which this is followed, is—1ſt, wheat; 2d, peas; 3d, barley, with graſſes; 4th, hay, cut, or ſometimes paſtured by ſheep; 5th, oats:—or by, 1ſt, wheat; 2d, peas; 3d, barley with clover; 4th, two or three years paſture; 5th, oats. We were rather ſurpriſed to find no mention of drilled beans in the rotations upon clay ſoil.

On light lands, turnip is uſed as the general fallow crop; followed by, 1ſt, barley with graſſes; 2d, hay; 3d, oats; 4th, peas; 5th, barley, with paſture graſſes; 6th, paſture for ſeveral years; 7th, oats:—or by, 1ſt, barley with graſſes; 2d, hay; 3d, two years paſture; 4th, oats. Theſe are ſome of the moſt approved rotations; though many others are practiſed. An extended rotation, from the original dreſſing, enables the farmer to go over the greater proportion of the land in his farm.

We are ſorry to find the Ruta-baga had begun to be leſs valued, as we know not of a vegetable better calculated to make winter and ſummer ſucculent feeding meet each other.

The average returns of grain *per* acre, are ſtated by the Roxburgh boll, which contains five firlots Linlithgow meaſure, and a trifle more, viz. wheat four bolls, barley four and a half, oats four and a fourth, peas two and three fourths. We conceive this to be a ſmall return; but preſume the ſeed is kept out, and the diſpoſable produce only given. The number of acres under oats are ſtated at 41,008, barley 16,404, wheat 9842, peas 6562.

The ſize of arable farms runs from 150 to 500 acres, and from 100l. to 400l. of rent. From 800 to 3000 acres is the general ſize of ſheep farms; but one farmer has often two or three of ſuch farms in his poſſeſſion.

Our author's ideas reſpecting tithes are very liberal for a clergyman, the generality of that profeſſion entertaining a hankering deſire after the fleſh pots of Egypt. He ſays,

'One or two clergymen have a right to ſome tithes, but have been in uſe, time immemorial, to accept a ſmall ſum in lieu of them. This is a loſs to them; but a material advantage both to the proprietors and tenants of the grounds, who are thereby freed from a vexatious obſtacle to uſeful improvements *.

That tithes are a vexatious obſtacle to improvements, cannot be queſtioned by any man who has ſtudied the ſubject. When thus decidedly condemned by a gentleman of diſcernment and information, one who may naturally be ſuppoſed not inimical to the ſyſtem, conviction muſt flaſh upon the mind of every one who has the public good at heart, and who is not diſpoſed to ſet individual advantage in oppoſition to national improvement.

The Roxburgh farmers would ſeem to conſtitute a very reſpectable claſs: 'Many of them have received a claſſical, and ſome a liberal education.' In regard to their manner of dealing, the author obſerves, 'they are likewiſe entitled to much praiſe for the plainneſs and good faith of their dealings. Bargains are not made with leſs chicane or higgling, or fulfilled with more honour, by the firſt houſes in the kingdom.' (p. 31. 33).

Two thirds, at leaſt, of the arable diſtrict, is encloſed; a meaſure indiſpenſable for appropriation to agricultural purpoſes, in a county partly arable, partly paſtoral.

We have been large in our analyſis of the *matter* of this Survey, though we pretend not to follow the author through his extenſive details; and we have left little room for extracts, as ſpecimens of his *manner*. We can only obſerve, that we believe his ſtyle to be ſo devoid of idiomatiſms of the Scotiſh language, and ſo much diveſted of all technic terms, that no Engliſhman will find it difficult to comprehend his ſenſe, nor will feel any expreſſion uncouth to his ear.

We ſhall juſt lay before our readers the author's judicious remarks on the beſt mode of forming roads; a ſubject, if not ſo immediately, at leaſt moſt eſſentially connected with agricultural improvement.

'In making both turnpike and croſs roads, too little attention was at firſt paid to avoid acclivities, and conduct them in the moſt level and neareſt direction. The gentlemen were inexperienced, unwilling to break into encloſures, or to injure the property of any individual; deſirous of ſtudying each other's conveniency, and, above all, anxious to obſerve

* Since writing the above, I learn that a clergyman has actually drawn, in 1796, the tithes of lamb, wool, *green* or new pulled lint, and natural hay, in kind, from one part of his pariſh, and has farmed the tithes of theſe articles in another part.

obſerve œconomy. Hence the line of former roads was followed as much as poſſible, to prevent both cauſe of offence and unneceſſary expence. A road, already partly done, could be completed at an eaſier rate, than a road wholly new. And proprietors had leſs cauſe to complain when an old road was widened, than when a new one was carried through their fields. There was alſo ſome ſaving in taking the advantage of bridges already built, inſtead of erecting others. On the ſame principle, the making of roads was committed to thoſe, who gave the loweſt eſtimate, and who were both ſparing of their materials, and unſkilful in laying them on. In a few years, there was a neceſſity, in ſome inſtances, to alter the direction, and in others to renew the roads. Theſe errors, however, have long ago been perceived and corrected. The later roads are made with an evident regard to eaſe, conveniency, and beauty; and are pleaſing indications of the judgment and good taſte of thoſe by whom they were planned. Yet not only here, but in the greateſt part of Scotland, the art of road-making is imperfectly underſtood; and perhaps the following hints, on this ſubject, may not be unacceptable to the public.

'The firſt care ſhould be to get a firm foundation. All the ſoil, and any ſoft ſubſtance that may be under it, muſt be thrown aſide, till gravel, rock, or hard till is found. In caſes where this would be difficult or expenſive, let the bottom of the road, after paring off the ſurface, be laid with bruſhwood, bramble, the branches of trees, eſpecially thoſe which have numerous twigs, or ſuch weeds and roots as are tough and cohefive. Theſe form a kind of thick net, to prevent the ſtones from ſinking, and the mud from riſing. The ſtones ſhould all be hard, broken very ſmall, and none of them ſmooth or round. The rough ſides and ſharp edges and angles of thoſe pieces made by the hammer, adhere together, detain the particles of ſand and gravel which are forced down among them, and become a compact and firm body. Whereas large ſtones, and even ſmall ones, when ſmooth or round, invariably work their way to the ſurface by the jolting of heavy carriages. The greateſt depth of ſtones ſhould always be on the middle of the road, and there ſhould be a very gentle ſlope towards each ſide, not above an inch or thereabouts to every three feet. When the ſlope is leſs, water will not deſcend readily; and, when it is much greater, all carriages will ſhun the declivity on the ſides, and go along the higheſt part, cruſh it down, form ruts, and deſtroy the road. A ſlope of five or ſix inches in fifteen feet is too trifling to be felt as an inconveniency by any carriage, and affords reaſon to expect an equal preſſure on every part of the road, than which nothing is more eſſential to its durability. It is alſo of vaſt importance to ſpread the gravel thickly, and equally, ſo that the teeth of a common garden rake may paſs along, and draw aſide the largeſt of thoſe ſmooth and round ſtones with which it abounds, without reaching the broken ſtones laid below. Theſe round and ſmooth ſtones, however ſmall, ſhould be ſubjected to the hammer, and mixed with the other ones which are ſtill uncovered. If the road, after being thus gravelled,

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was carefully beat down with a rammer, or if a heavy roller was drawn along the ſummit and each ſide, all inequalities and hollows would ſooner appear, and could eaſily be filled up with coarſe gravel. A ſmooth, equal ſurface, by not occaſioning jolts, removes one manifeſt cauſe of injury to roads. And a little care for a ſeaſon or two to fill up and conſolidate the ruts, will preſent a road which, of all others, bids faireſt to laſt long, and need little reparation. It is, indeed, attended with extraordinary trouble and expence at firſt; but will prove a ſaving in the end. By attending to theſe principles, truſtees on turnpike roads may be aſſured, that they ſhall be no loſers in the courſe of 30 years.'

Perhaps the author has thus deſcribed the beſt way of forming and making roads that has been hitherto deviſed; and we heartily beſtow our approbation upon the methods ſuggeſted by him. Road-making has been treated very ſuperficially in moſt of the county Reports, though few branches of political economy are more nearly connected with agricultural proſperity than the making and repairing of public roads.

We ſhall conclude with obſerving, that we could have wiſhed the author had taken to himſelf more latitude than he has thought proper to aſſume in regard to extenſive general reaſonings, for which his talents are abundantly adequate. Meantime, in ſo far as he has gone, we in general coincide with him; particularly in his opinion as to the abſurdity of withholding leaſes, even in mere paſture diſtricts, and of refuſing to the tenant the complete alienable property of his leaſe. In the ſentiments expreſſed upon theſe points, Dr Douglas will be joined by nine-tenths of Britiſh agriculturiſts; and we rejoice to ſee doctrines, which we have long maintained, judiciouſly illuſtrated by a gentleman who muſt be regarded by all parties as an impartial judge.

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*A Philoſophical and Practical Treatiſe on Horſes, and on the Moral Duties of Man towards the Brute Creation.* By John Lawrence. 8vo. 2 vols. Symonds, London. 1802.

TO farmers, few ſubjects can be more intereſting than that of the publication now under notice. Horſes, our ſole agents of labour, at leaſt in this quarter of the empire, are of ſerious importance, from their high price and expenſive keep. Hence, independent of moral feelings, every attempt to inſtruct us how to preſerve them in health and vigour, or to reſtore them when diſeaſed, muſt be received with complacency. How far the preſent performance is calculated for fulfilling theſe important ends, we ſhall not preſume to decide; not pretending to deep knowledge

ledge in the veterinary art: But we conſider it our duty to inform our readers of every publication that comes in our way, ſo nearly connected with agriculture.

Having never ſeen the firſt edition of this book, we know not how far the ſecond, now before us, may have been improved or enlarged: But the book certainly handles a number of very uſeful topics, in a moſt facetious and pleaſing way, though often rather whimſical and paradoxical in the expreſſions and the ſentiments which it inculcates.

In the very outſet of our obſervations, we muſt take leave to diſſent from the ſtrange account our author has been pleaſed to give of himſelf and his work. Were we to believe him implicitly, we muſt of neceſſity have thrown away his volumes, as the offspring of imbecility: For in his preface, he apologizes 'for the weak, defective, prolix, and tedious execution; as the offspring of a mind not naturally brilliant, but enfeebled, confuſed, and irritable, from chronic bodily weakneſs; and of a memory, at intervals, ſcarce ſufficiently retentive for the ordinary purpoſes of life.'

That his mind is irritable, we certainly have ſtrong proofs, in the ſevere manner in which he reprehends the unacknowledged plagiariſm of Taplin, his competitor for veterinary fame: But he gives ſo many inſtances of good ſenſe and ſound reaſoning, interſperſed indeed with what we conſider as miſtakes in principle, though not numerous, that we are under the neceſſity of queſtioning his accurate knowledge or deſcription of his powers in other reſpects.

In the introductory chapter to the firſt volume, a critical account of veterinary writers affords ſome very curious ſpecimens of the ingenuity of ancient horſe-doctors for poiſoning their patients; and ſome methods of torture, that no man above the level of a bullock-hunter can conceive without horror. One expreſſion, in an innocent receipt of old Markham, we ſhall enable our author to comprehend, and help him out at a dead lift, to uſe his own words. A *moldy-warp*, he may pleaſe to inform the old wives of his acquaintance, is very nearly the German and Scotiſh name for a *mole*.

After a chronological account of writers on horſes, from Blundevill in Queen Elizabeth's reign, through Morgan, Maſcal, Martin, Clifford, and others now forgotten, and the *redoubtable* Gervaſe Markham; who, he ſays, 'was the oracle of ſapient grooms, the fiddle of old wives, and the glory of bookſellers; though only a mere vulgar and illiterate compiler of works, ſtuffed with all the execrable traſh ever invented by writers, or practiſed by farriers;' he ſtops a little to conſider

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and comment upon some of the contents of his *Pandora's box*, but which we shall not present to the taste, smell, or feelings of our readers. Baret, De Grey, and Snape, come next in order. The Duke of Newcastle is mentioned, with a strange allusion about *the half of a stately pair*, which we confess ourselves too dull to comprehend. Sir William Hope is the last in his list of exploded writers, who, since old Markham, drenched the wretched horse with nauseous slops, or consigned him to useless torture in the hands of ignorance and brutality.

Gibson and Bracken are next mentioned with praise, as having first established veterinary practice on true medical principles. Many others are noticed, as having published on the subject; but these two only are considered as any way entitled to the merit of originality.

Of the numerous successors of those two favourite writers, the opinion of our author shall be given nearly in his own words: 'Of mere compilers, &c. we have had many more than *quant. suff.* in the present century. Of these worthy labourers, some had perhaps a superficial knowledge of horses, but none at all of physic or surgery: others had a smattering of medicine, without any knowledge of horses; but most seem to have known nothing of either.'

The Treatise on Live Stock, by the experienced and respectable George Culley, is almost the only work which escapes the reprehension of Mr Lawrence. This he properly characterises as 'the only original work of the kind in our language, and as containing a most valuable fund of information.' The treatises which have been published by Mr Clark, his Majesty's farrier for Scotland, are also exempted from his opprobrious list, and treated with considerable and well merited respect.

Not to be tedious, we shall now refer our readers to the work itself, for the critical remarks it contains on the veterinary writers of France. His next object of attention, is *the Gentleman's Stable Directory*, by Mr Taplin. And here Mr Lawrence certainly assumes the critic *con amore*. He alleges, that Mr Taplin, 'who professes to teach an entirely improved practice, and to exhibit remarks on the dangerous, and almost obsolete, practice of Gibson, Bracken, Bartlet, and Osmer, has only compiled from these, in the most barefaced manner, though endeavouring to conceal his plagiarism under the cloak of downright ribaldry, pretended experience, or affected invective.' How far these very serious charges may be just, we shall not attempt to investigate. Veterinary medicine and surgery are not professionally known to us; and the dry labour of comparing systems,

ſyſtems, of which we do not pretend to be fully converſant in the principles and practice, we do not conceive to be within our province.

The whole of the firſt Volume, and a conſiderable portion of the ſecond, though divided into chapters, as conſtituting integrant parts of a regular whole, contain, in fact, a number of detached eſſays upon various topics. Theſe are indeed connected with the general ſubject, horſes; but frequently indulge in epiſodical deviations, in which the connexion is by no means very evident. The introductory chapter we have already noticed. The others, in the firſt volume, are—On the horſe in general—On the *rights* of beaſts—On the hackney and hunter—The modern method of riding—On draught cattle—On the menage—On ſhoeing.

In the ſecond volume—On the philoſophy of ſports—Stable economy—Draught oxen—Purchaſe and ſale—The turf.

Then follow a number of chapters, containing our author's propoſed ſyſtem of veterinary practice. And the work concludes with a chapter on the diſeaſes of horned cattle, and the proper treatment of cows and calves.

It would very much exceed our limits to attempt any analyſis of the contents of thoſe numerous diviſions; and we have already expreſſed our incompetence to decide on the merits of many of them; beſides, our author does not pretend to originality in his veterinary ſyſtem, which is acknowledged to be compiled from his favourites, Gibſon and Bracken.

The third chapter of volume 1ſt treats *on the rights of beaſts;* and we confeſs that much ſatisfaction has been received by us on the examination of it. After diſcuſſing the abſtract principle with conſiderable ability, the author declares, that

—' the grand ſource of the unmerited and ſuperfluous miſery of beaſts, exiſts, in my opinion, in a defect in the conſtitution of all communities. No human government, I believe, has ever recogniſed the *jus animalium*, which ſurely ought to form a part of the juriſprudence of every ſyſtem, founded on the principles of juſtice and humanity. The ſimple right of theſe four-legged, and mute citizens, hath already been diſcuſſed. Experience plainly demonſtrates the inefficacy of mere morality to prevent aggreſſion, and the neceſſity of coercive laws for the ſecurity of rights. I therefore propoſe, that the Rights of Beaſts be formally acknowledged by the ſtate, and that a law be framed upon that principle, to guard and protect them from acts of flagrant and wanton cruelty, whether committed by their owners or others. As the law ſtands at preſent, no man is puniſhable for an act of the moſt extreme cruelty to a brute animal, but upon the principle of an injury done to the property of another; of courſe, the owner of a beaſt has the tacit allowance of the law to inflict upon it, if he ſhall ſo pleaſe, the moſt horrid barbarities.' p. 123.

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It is clear that no man can be punished for cruelty shown to an animal, unless it belongs to another person; and the punishment then inflicted proceeds upon the ground, that the property of your neighbour is injured, and not because the animal was hurt or destroyed. Indeed, some of our great orators appear to think, that the true British character is preserved by encouraging brutal sports. Their theory seems to be, that cruelty and bravery are synonymous terms. Therefore, any statutory regulations, such as proposed by our author, will always be opposed by people of this unhumanized description.

In volume first, p. 322. and again, volume second, p. 121. our author labours hard for oxen as beasts of slow draught for farm work, in preference to horses; though he previously apprises his readers, that 'he has never used oxen for draught.' We cannot help remarking, that this puts us in mind of the monkey in the fable, who persuaded puss of the excellence, pleasantness, and safety, of taking chesnuts from the fire with her paws, though he did not choose to risk his own. He quotes Mr Culley, already mentioned, with well merited praise, as keeping one hundred and fifty draught oxen; using them, in pairs, in the plough, with reins, and no driver, and single in carts. How this fact may be, we know not: But seventy-five ploughs, even supposing no horses kept, would indicate a most enormous farm, especially considering that Mr Culley is a most extensive breeder and feeder of sheep. It is likewise rather singular, that the Agricultural Report for Northumberland, drawn up by Mr Culley, in conjunction with Mr Bailey, should give a most decisive opinion in favour of horses, as beasts of farm draught, after a fair discussion of their merits and expences, as compared with those of oxen. Perhaps our author takes the past for the present, and does not reflect on the many changes introduced into rural practice since the time that Mr Culley's book on live stock was published. If Mr Culley has changed his sentiments on the working of oxen, it is the strongest proof that can be offered in favour of the superiority of horses. As already said, we are ignorant how the matter exactly stands; but, as the Northumberland Survey more decidedly embraces the cause of horses than any publication we have perused, it is fair to infer, that that most respectable agriculturist has seen cause to change his sentiments, and consequently his practice.

Of the merits of the system of veterinary practice, we have already declined, for good reasons, to give any opinion. On one subject, however, an old surgeon, not veterinary, has furnished the following hint. Mr Taplin, with great and proper zeal for the safety and care of horses, strongly inculcates the propriety

propriety of only employing the very beſt medicines of every kind. This is too much neglected, even for the internal uſe of human patients. On the ſubject of aloes, he inſiſts that none, except ſaccharine, ought ever to be exhibited. Our friend alleges, that the kind called beſt Barbadoes are perfectly ſafe, and much cheaper; but hints, that purging, in general, except with great precautions, and in moderate doſes, is very dangerous for horſes; in conſequence of the enormous length of their ſmall guts, and the peculiar inſertion of theſe into the colon and cæcum, from which horſes are often killed, by theſe latter being burſt, through the exceſſive violence of ſome purges.

In order that our readers may be enabled to form a tolerable notion of Mr Lawrence's principles and method of writing, we give the following extract.

P. 470. volume ſecond, ſpeaking of the colic, a diſorder that kills more horſes than all others put together, he ſays—

'The primary cauſe of a common fit of the gripes in a horſe, is, nine times out of ten, an accumulation of indurated excrement in the inteſtines; for, independently of the ſolid obſtruction ſo occaſioned, the uſual proximate cauſes would ſeldom have power to work thoſe ſerious effects we witneſs: thus, in a horſe, the colon of which was not previouſly infarcted and plugged up, the effect of a ſlight cold thrown upon the bowels, or the devouring a few new beans, would probably paſs off with a very moderate ſtruggle from nature.

'The ſymptoms ſcarcely need deſcription—cold dew at the ear-roots and flanks; frequent pointing to the ſeat of complaint, and a deſire to lie down and roll; ſudden riſing, and great agitation: the greatneſs of the agitation, or rather jactitation, no convulſions exiſting, ſeems to form the diagnoſtic in all colicky complaints.

'The CURE requires prompt and vigorous meaſures, and plenty of aſſiſtants to conduct them. Looſe ſtable, or out-houſe, well littered down, that the horſe may have room to roll himſelf without injury. Clothe with warm dry clothes. Man to attend the head, that it be not beat againſt the pavement or wall; another, or two, to rub the belly well at every quiet interval; a more effectual help than generally imagined, to diſperſe the wind. Bleed, if poſſible, in the neck veins, not only to aſcertain the quantity, but becauſe, ſurely, it cannot be irrational to ſuppoſe ſuch a ſubſtance as blood improper to be taken into the ſtomach, under the circumſtances. Whilſt medical remedies are preparing, walk the horſe about briſkly in hand, one following with a whip; or keep him to the jog-trot; but drive him not faſt, or haraſs him, on any pretence, which has ruptured the belly of many a horſe, and which at leaſt often inflames and exaſperates the ſymptoms. Back-rake with a ſmall hand well oiled, and give the common gruel GLYSTER, with half a pint of oil, and a large handful of ſalt: immediately pour down by the mouth, half a pint of Holland's geneva, rum, or brandy, and a like quantity

quantity of sweet oil, mixed, or a little diluted with thin gruel, if thought too strong; keep the horse on his legs, and exercise him forthwith. If to be obtained soon, and demanded by the exigence, add to the glyster four to six ounces of Glauber's salts: Or, of tincture of jalep, or of senna, two ounces; or best aloes, in very fine powder, half an ounce; and to the drink, three or four ounces syrup of buckthorn; or *Elixir Proprietatis*, or *Tinctura sacra*; castor oil may be used instead of olive; a notched onion may be thrust up the fundament; or an onion, and a piece of soap the size of an egg, beat up together into a soft bolus, with a pinch or two of pepper; afterwards a glyster of black soap, one ounce to a pint warm water. Should suppressed perspiration thrown on the bowels be among the causes, the warm seeds, ginger, castor, and camphor, should make part of both the drinks and glysters. For a large cart-horse, where wind is not the predominant symptom, and no appearance of cold, the following drink: Gin, brandy, or rum, and sweet oil, one pint each, mix with the solution of six ounces Glauber's salts, repeat in two or three hours, warm gruel in the interim. The repetition of these must be left to the judgement of the practitioner; but plenty of warm gruel and warm water should ever, in these cases, be at immediate call; as sometimes the throwing in two or three gallons of these, at both ends, and at proper intervals, will do the needful, with little or no assistance from the apothecary. Bracken cautions against the common practice of farriers, who give large quantities of Venice treacle, mithridate, or diascordium, both by way of drink and glyster, upon loaded intestines; thereby locking up the cause of the disease still more securely: he compares it to firing a pistol into the horse's fundament, by way of clearing all obstructions at once. Mashes. A week after the cure, a gentle purge or two.

'The FLATULENT, or WIND COLIC, is known by great fullness and tension of the belly, from rarefaction of the air contained in the intestines; *borborigmi*, or rumbling of the guts, discharges of wind, and frequently strangury, occasioned by the fulness and pressure of the streight gut upon the neck of the bladder. This last is denoted by the horse rolling upon his back, and by frequent ineffectual attempts to stale. Crib-biters, from constantly sucking in large quantities of air, are particularly subject to windy gripes.

'The intention of CURE plainly consists in the speedy exhibition of volatile and carminative, of diuretic and laxative medicines, which ought to be given both in the form of glyster, and by the mouth. Ball. Strasburg, or Venice turpentine, juniper berries, and carraway seeds pounded, each half an ounce; fine aloes, well powdered, two drachms; sal prunel, one ounce; chymical oil of juniper, one drachm; salt of tartar, two drachms; ball with honey and hard soap. Wash down with a pint or two warm gruel. OR, the following drink: Castile soap and nitre, one ounce each; juniper berries, and carraway seeds, half an ounce each; ginger powdered, two drachms; Venice turpentine, dissolved with the yolk of an egg, six drachms; tincture of senna,

ſenna, an ounce or two. Mix with warm ale and treacle. Repeat. GLYSTER as before, with the addition of carminatives: camomile flowers, two handfuls; aniſe, coriander, and fennel ſeeds, one ounce each; long pepper, half an ounce. The following herbs are preſcribed; but as, in general, there may be a difficulty in obtaining them, I have ſubſtituted water-gruel, which, in truth, I have always found an excellent ſubſtitute: Mallows, pellitory, elder-flowers, the herb mercury, mullein, bear's-breech, &c.

'St Bell remarks on the difficulty of hitting the critical moment proper for the exhibition of opium in long continued pains, and of regulating the quantum of the doſe. He pretends, that ſhould the opiate be too weak, the pains will be enraged; if too powerful, that it will haſten death. Bracken determines the proper time for the uſe of opiates to be, after the cauſe of the diſeaſe ſhall have been removed by lenient purgatives and glyſters; when the former are requiſite to complete the cure, by appeaſing pain, allaying the tumult of the bowels, and obviating ſuperpurgation or flux.' p. 470—475.

We now diſmiſs Mr Lawrence, from whoſe ſingular performance we have derived much amuſement; and, though we cannot commend the irritation with which he has choſen to attack Mr Taplin, nor the whimſical excurſive digreſſions in which he ſo frequently indulges, we are diſpoſed to think our readers may find ſeveral things in his performance worth their peruſal.

*R. r.*

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*A Treatiſe on Leaſes, explaining the Nature and Effect of the Contract of Leaſe, and pointing out the Legal Rights enjoyed by the Parties. By Robert Bell, Lecturer on Conveyancing appointed by the Society of Writers to the Signet. Octavo,* 481 *pages, with an Appendix of* 125 *pages. Edinburgh,* Creech, *and* Conſtable, 1803.

IN a ſuitable and well written Preface, Mr Bell informs his readers what was his object in undertaking this work. 'If (ſays he) I ſhall have been ſo fortunate as to convey to thoſe *who are better acquainted with agriculture than with law*, ſuch a notion of the legal rights of landlord and tenant, and of the various points to which the attention of parties entering into the contract of leaſe ſhould be turned, as may enable them to direct the conditions and ſtipulations of the contract with more confidence, I ſhall have fully attained my object.'

But the modeſty of Mr Bell's pretenſions in his preface is the more pleaſing, when we diſcover, on a careful peruſal of his performance, that he might, with great juſtice, have ſaid, This is the completeſt treatiſe on Scotch leaſes that has ever been

offered to the public, and equally useful to the lawyer as to the landed proprietor and farmer.

In explaining the nature of that contract betwixt landlord and tenant, by which the temporary use and possession of land is bestowed for a yearly rent; giving a history of this deed, and bringing fully into view whatever relates to its constitution; the rights which arise from it, and the actions by which these rights are to be enforced—Mr Bell proposes to observe the following arrangement. We give it in his own words.

'I shall endeavour to explain the progress of the lease, previous to that period at which it appears in the authorities of our law.

'2. I shall consider it as affected by these authorities.

'3. I shall then endeavour, in a commentary on the form of the lease, to explain the nature of the contract, with all the variety of regulations and conditions which the views of landlords and tenants, the peculiarities of their situation, or the state and condition of the farm, may require.

'4. I shall conclude this part of the subject with an inquiry into the effect which, in various circumstances, is given to verbal or informal leases.

'5. Proceeding then to the rights arising from the lease, I shall endeavour to explain the different interests of the landlord and tenant.

'6. The means by which the tenant's right may be transferred to purchasers or creditors. And,

'7. The rules of succession by which it descends to his heirs.

'8. The treatise will properly be concluded by a discussion of the forms of actions competent to either party.'

Accordingly, the First Chapter treats of the ancient state of the lease, in which Mr Bell endeavours to show, that the cultivators of the soil of this island were not anciently slaves, as supposed by Lord Kaimes, and other writers on that subject, but were free men; and that 'the lease was introduced by the Romans; was in use in the times of the empire, and has continued, with no very essential alteration, to the present time. Its form was preserved by the churchmen, whose notaries having succeeded to the notaries of the empire, preserved the forms of their deeds, and handed them down to the conveyancers of modern Europe.'

In illustration of this doctrine, Mr Bell has given, in the Appendix, several curious and learned notes.

The Second Chapter treats of the lease as affected by statute, which particularly includes some discussion relative to what leases have the benefit of the act of Parliament 1449, by which tacks are declared effectual against purchasers. He particularly takes notice of the case of the Earl of Hopetoun against Mr Wight at the

the Murrays, on the estate of Ormiston, who had obtained a sort of perpetual lease from Mr Cockburn of Ormiston. Mr Wight's tack was renewable every term of nineteen years for ever; and Lord Hopetoun, the purchaser of the estate of Ormiston, tried to set it aside, because it had no definite termination. The Court of Session found this lease, however, could not be reduced. Mr Bell observes, that in the decision in this case, 'the Court seemed to say, in express terms, that had Lord Hopetoun been a purchaser, unaffected by any such obligation as occurred here, he would not have been bound to give effect to the lease; the decision proceeding solely on the circumstance of his having barred himself from reducing any lease that might infer recourse against the seller.'

The Third Chapter contains the form of a lease, with many apt observations upon it. On this head, a somewhat curious question is treated of, viz. Whether a tenant, who is restricted by his lease from assigning it, or granting a subtack, has in any case the power of appointing a manager of his farm.

'Still it remains (Mr Bell observes) to be considered, before leaving this subject of the destination of the lease, whether, if assignees and subtenants are both excluded, it be in the power of the tenant, or his creditors, to possess the farm, under a manager for behoof of those having interest.

'This is certainly a most equitable power, now that large capitals are employed in farming: for how unjust were it, that a tenant, who may have contracted the debts that oppress him in improving the farm, and which improvements are capable of extricating him from his difficulties, should, in the event of any sudden misfortune, be deprived of those means of relief, on which both he and his creditors had a title to rely? A lease, which should exclude such a power of mananagement, without providing some other plan, by which full justice might be done to the tenant, would be highly fraudulent.

'This plan is said to have been devised by the late Lord Covington when at the Bar, and to have been followed, under his directions, in a case which came afterwards to receive the decision of the Court. That was the case of Jamieson Durham *v.* Henderson and Livingston, 23d January 1773. In this case, the Mains of Duntarvie were let to Livingston, his heirs and successors, excluding assignees and subtenants. In the 1770, the crop and stocking was poinded for debt; and the creditors having consulted Mr Lockhart as to the measures which they ought to follow, he advised them to appoint a factor or manager over the farm. In place of this, however, the tenant gave a right to Henderson, that he might be enabled to make out the engagements he had come under to his creditors, and, his advances being repaid, the right was to be at an end. The Court decerned in a removing against the tenant; and this is all that appears in the Faculty Collection. But the

matter was not allowed to rest here; and the question being brought under review, and urged on this point, whether the tenant might not appoint a manager? the Court continued the tenant in possession.

'The point was again canvassed in a case, Laird & Co. *v.* Grindlay, 30th June 1791. This was the case of a mill let to Grindlay and his heirs, secluding assignees and subtenants, without the consent of the landlord. Grindlay the tenant died; and his affairs being in disorder, his creditors endeavoured to make an agreement with the landlord, by which they might have enjoyed the benefit of the lease during the period then to run: But, finding this impracticable, they applied to the tenant's brother, and prevailed with him, in the character of heir, to give a letter, empowering one of the creditors to manage and superintend the mill, and to act as freely, in all respects, as if the heir were personally present; and he was taken bound to account to the heir for his intromissions, after deducting his necessary expences. On giving this letter to the manager chosen by the creditors, the heir received an obligation of relief from the creditors, freeing him from the consequences of thus representing his brother; and the profits of the lease were to go exclusively to the creditors.

'When this manager began to act, a removing was brought before the Sheriff, who (in respect it appeared that the heir was in possession by means of his servants or mandataries, and that there is no clause in the deed requiring residence on the part of the tenant) dismissed the action. The Lord Justice-Clerk (M'Queen) remitted the cause *simpliciter*, that is to say, adhered to the judgment of the Sheriff, and this judgment the Court confirmed.

'If, therefore, this power is to be taken away, it must be done by an express clause, declaring the bankruptcy of the tenant to be an irritancy of the lease: But, certainly, where such a clause is to be introduced, it were a piece of justice to provide for the proper letting of the farm, and the appropriation of the surplus rent to the tenant or his creditors.

'The great difficulty in devising a plan of this kind, will consist in uniting the interests of landlord and tenant; for, on the one hand, it is obvious, that to dispose of the lease to the highest advantage, it ought to be put up to public roup; whereas, by this manner of disposing of it, the very thing happens which the landlord is anxious to guard against, and he is deprived of the privilege of choosing his tenant: perhaps it might reconcile these jarring interests, were the creditors to have a power of offering a new tenant (and which new tenant would pay a premium to the creditors, and be preferred at a public roup, or in any way agreeable to the creditors); the landlord, on the other hand, possessing a power of retaining the farm, on paying the same premium to the creditors which the new tenant would have paid, had he been received by the landlord. In this way, the creditors would receive the full value of the lease, while the landlord, without suffering any loss, would be able to exclude an improper tenant.'

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In considering the manner of enforcing plans of management of farms contained in leases, Mr Bell takes a full view of the form of a lease proposed by Lord Kaimes, with Dr Anderson's remarks on that subject in the General View of the Agriculture of Aberdeenshire; and he also considers at some length the obligation on a tenant, by his lease, to remove without warning, and seems to consider obligations for additional rent stipulated to secure a removal as unnecessary; though such are sustained by our Courts of law, as well as those for securing a plan of management.

The Fourth Chapter treats of the verbal lease, which is effectual but for one year; of the obligation to grant a lease; of the informal lease; and the circumstances which may render an informal lease binding.

Chapter Fifth treats of the rights arising to parties from the contract of lease. Two prominent articles taken notice of in this chapter are, those of straw and dung on the hand of a tenant at the end of a lease; a subject that has been fully considered in our last volume: and as much the same principles are stated by Mr Bell as there laid down, it seems here unnecessary to enter on any detail.

The landlord's right of hypothec is also considered in every point of view: cases also of sterility or calamity, and the tenant's interest in the surface, with the landlord's right to mines and minerals, including kelp, shell marl, pipeclay, &c. and privilege to hunt on the farm, are elucidated. On this last topic, the remarks of Mr Bell shall be presented to the reader.

'Besides the fruits, the tenant has right to the temporary use and enjoyment of the farm; and the lease must enable him to exclude all others from entering on the grounds, in the same manner that the landlord himself might have done.

'The right of property in lands implies, beyond all question, an exclusive right of possession. The proprietor may prevent all and sundry from entering on his lands. Of this we have a strong instance in the case of the Earl of Breadalbane v. Livingston, June 16. 1790. Mr Livingston, a gentleman of considerable landed property, and fully qualified by law to hunt, had hunted for some days in the moors belonging to the Earl of Breadalbane. These moors were unenclosed, so that Mr Livingston being qualified, and having entered no enclosure, the question which was decided betwixt him and the Earl, was a question as to the power inherent in a proprietor of excluding all others from entering on his property; and the Court found that Mr Livingston had no title to enter the Earl's moors, and decerned in a declarator to that effect; not only so, but they gave expences against Mr Livingston, a judgment which was affirmed in the House of Peers.

'This case, though arising from a claim for liberty to hunt, is applicable to every case of an entry on the lands of a proprietor for recre-

tion and amusement. In every case of the kind, the principle of this decision must protect the right of the proprietor, and enable him to exclude all others from entering even on his unenclosed ground without his consent.

'If this be the right inherent in a proprietor, this right must of course be communicated to the tenant; and without it he could not be said to have the use and enjoyment of the farm. In this view, the tenant, during his temporary possession, may, equally with the proprietor himself, exclude others from the farm. But here a question of some nicety occurs; and it may be asked, whether he is entitled to exclude the landlord?

'In certain circumstances, we know he cannot; for it has been found, in all the cases we have lately had occasion to consider, that the landlord has right to enter on the farm in the exercise of his reserved power. He may enter it to search for and work mines, and he may do so of course by those who are capable of performing that service. He may enter the farm to inspect his woods, or for the purpose of cutting them down, and disposing of them; or he may enter it to inspect the state of the farm. In all of these cases, the landlord by himself, or those acting under him, must have access to the farm. But it may be questioned, whether this right can be extended to the case of hunting or of recreation.

'This is a question which cannot be said to have been hitherto taken up by the Court: it did occur in the form of an advocation from the Sheriff-court of Ayr, where it had been found, that the landlord possessed a right of hunting. But the bill was passed, and the question is still in dependence before the Lord Ordinary.

'On this point, I may be forgiven for making a few observations, since their tendency will only be to render a landlord, who is desirous of preserving a power to hunt over his own grounds, careful to make an express reservation of that power in his leases.

'The right of hunting is merely a right of killing, or taking, that description of animals, known under the name of *game*; it is not a right connected with the property of land, since the acts by which the qualification is constituted, are intended to restrict an existing right, not to create a new one. The right of hunting was, at one time, not only open to every man in the kingdom, but was enjoined as an exercise necessary for preserving the military spirit of the people; the power thus vested in every individual was, by the act 1621, c. 31. restricted; and those only who were possessed of a ploughgate of land in heritage were declared qualified to hunt. But this privilege does not enable a qualified person to hunt in the fields of another; it gives merely a right of killing game in those places to which he has free access.

'There is, therefore, no magical power in the term, hunting; and a landlord, when he pretends to have a right to traverse the fields of his tenant, for the purpose of hunting, is equally entitled to say, that he possesses the same power in pursuit of a butterfly, or in any botanical research with which he may choose to amuse himself.

'If a landlord has a power of entering at all times on every part of his tenant's possession for his amusement, he must be equally entitled to

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do so where it is connected with his own conveniency; of course, he must be entitled to make a road for himself through the most convenient part of the farm. But this will scarcely be said to be within the power of the landlord; and yet the power of excluding the landlord from using a road, implies in it the power of excluding him from those individual acts of trespass, of which the road is the aggregate; or we must say, that a landlord, though he cannot pass through the fields of his tenant for his convenience, may do it for his amusement.

'It may perhaps appear to be a strong argument in favour of the landlord, that no opposition to the exercise of this privilege has hitherto been made by the tenantry of this country. But when the situation of that tenantry, and the state of husbandry, is considered, it ought not to appear surprising, that a question of this kind should occur only when attention begins to be paid to the true interests of agriculture; and the same sound policy which at one time prescribed hunting as a means of national strength, ought now, with the same view, to protect with equal care the operations of the farmer. But how can such an argument have weight, when it was only last day that Lord Breadalbane vindicated, for the first time, the right of proprietors, and, by the the decision of a Court, protected their unenclosed property from the foot of the hunter?

'It were strange, indeed, should the law protect the most barren hill in the Highlands, a property incapable of damage, while it is unable to protect the rich enclosed field of the farmer from the destructive intrusion of men, and horses and dogs, and all those followers who do not fail to attend on such occasions; intrusions, which must derange the operations on which the individual success of the farmer, as well as the advantage of the country at large, must depend. It is true, he would be entitled to redress, but that redress which a tenant might find in a Court of law, is one to which no prudent man will resort. And whether a burden of this kind ought, in the present state of husbandry, to be imposed on the operations of the farmer, is a question that merits a very serious and deliberate discussion.

'This is a point which being once suggested, the peace, as well as the interest of the parties requires that it should be put to rest by a judgment in the last resort; it will otherways remain as a source of dispute, to which the landlord or tenant may equally resort, as a means of gratifying ill humour.'

Chapter Sixth treats of the means by which the tenant's interest in the lease is transferred, viz. 1. By assignation, of which a form is given, and analysis of the clauses of it; and, 2. By sub-lease.

The Seventh Chapter explains the rules of succession to the interests of landlord and tenant in the lease, and the nature of the title required in the person of the heir of the tenant. Some nice questions are here considered with regard to what the executors of a landlord are entitled to succeed to of the rents, and what

the executors of a tenant ſucceed to, and how far they are burdened with rents due, and to become due to the landlord.

The laſt Chapter gives a full account of the nature and effects of all actions at law ariſing on the leaſe: And the Appendix contains the forms of ſuch actions, with copies of the acts of Parliament and acts of Sederunt on which they may proceed.

Throughout the work, Mr Bell gives in general no opinions but what are ſanctioned by deciſions of the Supreme Courts, which he quotes fully and accurately. The ſpeculative queſtions that he diſcuſſes are few, but theſe are ably handled. His manner is eminent for perſpicuity; and his ſtyle plain, pure, and adapted to the ſubject. In a word, we have received much ſatisfaction from a peruſal of this treatiſe, and earneſtly recommend it to the attention of our readers. A multitude of queſtions have lately ariſen betwixt landlords and tenants, many of which might perhaps have been avoided, if the laws in force for regulating the connexion had been more generally underſtood. It is not our buſineſs here to ſay whether theſe laws are, in every caſe, calculated to promote agriculture, and to maintain the intereſt of the tenantry; but we can ſafely declare that no former writer has illuſtrated them with greater ability than is done in the preſent caſe by Mr Bell.

A. S.

## Postscript to First Branch.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Sir,

In common with many others, I derive pleaſure and advantage from the peruſal of your Magazine; and as I feel much intereſted in its well-doing, I take the liberty of addreſſing to you theſe few lines.

In a work of this nature, it is perhaps the duty, certainly the decided intereſt of its conductor, to convey inſtruction in language as temperate as poſſible.

I am led to this reflection, by obſerving that many expreſſions are uſed by anonymous writers, which, under their own ſignatures, they would hardly have ventured on, and by the peruſal of a criticiſm in a late number, on a work entitled '*The New Farmer's Calendar*,' in which I am in ſome ſmall degree implicated. Works by this author, like your own, are reported to have had a moſt extenſive ſale (the one in queſtion is ſaid to have gone through four large editions); and perhaps great authors, like great beauties in a country town, muſt feel a little jealous of each other's ſucceſs; but, like them, they ſhould alſo endeavour to be civil on all public occaſions.

The topic of animadverſion here alluded to, appears to be the accidental

accidental approbation of Ducket's hand-hoe, which I was guilty of recommending to notice ſome years ago. Doubts were entertained, or rather more than doubts, that a man could not hoe as much land, in a given quantity of time, as was repreſented in that work. The ſtatement was not mine; ſtill I can have no doubt of the fact; nor will the Reviewer himſelf have any, when he remembers, that the hoe cleans three rows of corn at nine inches intervals, at once. If he wiſhes to know the extent and importance of hand-hoeing, let him ſeek for information in the county of Eſſex, which one of your authors conſiders to be a well-farmed county. Your Reviewer's ſurpriſe will ceaſe, when he learns how much is done there in a day, and in many other counties, by the hoe of common conſtruction. Let him alſo advert to the price of hand-hoeing broadcaſt turnips; 4s. 6d. per acre for the firſt hoeing, a common price, where every turnip is ſet out and earthed up; and a leſs ſum for the ſecond.

I noticed, in a work lately publiſhed, the Portugueſe hoe, and expreſſed myſelf in the following words:—

'In the uſe of the hoe, the Portugueſe excel in a very great degree. The ſtrong land in their vineyards, which muſt be dug by hand, could not be worked by hoes upon a conſtruction common with us; but the handle being ſhort, as well as light, the hoe, by its own weight and conical form, cuts deep without much exertion. Every man who has ſeen theſe implements at work, will bear teſtimony to their extraordinary powers. Mr Mark Ducket, in his ingenious invention of a hoe for cleaning crops of all deſcriptions, whether drilled, or hand-ſet in rows, ſeems to have availed himſelf of a ſhort handle and heavy iron-work, the exact reverſe of our common hoe, which, except on the lighteſt ſands, demands great exertion to make any impreſſion whatever, if the ſoil be dry.

'The inhabitants of mountainous diſtricts on many parts of the continent ſet us excellent examples, by taking advantage of every ſpot of ſoil, however ſteep and difficult of acceſs, and turning it to the uſe of vegetation: Nor could this be effected by any better implement than the Portugueſe hoe. This hoe the author has put into the hands of a Weſt India gentleman, for the uſe of our colonies, who was bound to the Weſt Indies, and driven into the Tagus in diſtreſs. The author happening to expreſs his regret, that he had not, juſt then, the means of obtaining for him Mr Ducket's hoe, which, in conjunction with the other, would form a complete ſyſtem of hand culture, where hand culture was requiſite, was ſurpriſed and gratified to learn, that ſome dozens of theſe hoes were actually on board the veſſel, for the uſe of the colonies. It then occurred to him, that he had, in the courſe of laſt ſummer, ſuggeſted the uſe of this implement to a very diſtinguiſhed perſonage, who intereſts himſelf not a little in the welfare of thoſe iſlands. Many will perhaps ſuppoſe, that this hoe, however applicable elſewhere, would

would be of but little uſe here. It will, however, appear to be ſerviceable in many caſes, ſuch as digging dung, or compoſt of lime and earth—angles of fields—where the plough has not room to act—very ſteep ground, not ſo well ſuited to the ſpade—foreheads (head-lands). This practice is well underſtood in the vale of Taunton, and recorded by Liſle, even in his time, as an admirable practice of long ſtanding there. (See an account by the author, in Annals of Agriculture, 1798.) It will alſo be found uſeful in hand-digging orchards and plantations; the young trees of which will not only thrive better for ſuch treatment, but might ſupply abundant crops of potatoes to the proprietor and labourer. If, in this caſe, the former finds land and manure, and the latter finds labour, the crop may be divided between both; but if no dreſſing can be afforded, the whole crop ſhould be the labourer's, becauſe the landlord will derive an ample benefit from the improvement of his timber, provided the crop be dug with care. The graſs of plantations ſeldom turns to any account, nor is much good derived from that of orchards, for it is of a cold and ſour nature, owing to the ſhade; and little profit will ever be found in it as hay, unleſs ſprinkled with ſalt. It is probable that orchards would derive as much benefit from the uſe of the hoe as plantations.'

On the ſame principle, Sir John Sinclair recommended, for general adoption, the field ſpade now uſed in Normandy, Italy, and in the ſouth-weſt counties of England. Its conical ſhape enables it to move ſtone land far better than the broad garden ſpade; its curved handle enables the workman to ſtand upright and make it (the handle) a lever (of which his knee, or rather thigh, is the fulcrum); qualifies it to ſpread abroad lime; and it is likewiſe admirably conſtructed for cleaning out the bottom of wet ditches.

You will now ſee, that theſe hand-hoes were recommended, not to ſuperſede the horſe-hoes, but to act where they could not be applied. On my own farms, I ſhould be ſorry to yield to any of your numerous readers in the uſe of the horſe-hoe, either as to expedition or neatneſs of work. All that is in any degree level of ſurface, provided the ſoil works free, and is loamy, we drill; where the land is ſteep, or the ſoil heavy, we broadcaſt.

The drilled wheats we horſe-hoe twice, the barleys twice alſo, before the graſſes are ſown broadcaſt and bruſhed in. The peas, drilled at 15 inches intervals, are horſe-hoed thrice, beſides hand-hoeing the rows.

You will therefore ceaſe to think me an enemy to the horſe-hoe, where with convenience and profit it may be worked. We will proceed to ſay a few words on another ſubject.

On the great queſtion of working oxen, I am deſirous that we ſhould alſo come to a right underſtanding; and I truſt that, although my opinions may differ from yours, you will do me the

the juſtice to believe, that I advance nothing without proof, and that the beſt recommendation of theſe my ideas to your notice, is an honeſt deſire to ſerve the common cauſe, and an inceſſant attention and practice for nineteen years paſt. The uſe of oxen, even under many impediments, has been perſevered in for ages paſt, and will continue in every country where a breed is found active in themſelves, and of a form and ſize well adapted to labour; but now that oxen fit for grazing are hardly to be found, this becomes every day a queſtion of greater importance, the ſupply of our navy particularly conſidered. We muſt not conceal from ourſelves, that half grown, and therefore half fat animals will not take ſalt well; nor ſhould we forget, that our ſeamen muſt have ſalt beef, and good in quality too, as well as ſalt pork; and, on this account alone, labour, even to the amount of what theſe animals conſume, is valuable, becauſe experienced men know that the growth of a working ox is greater the laſt year of his work, namely, from five to ſix in cattle of moderate ſize, and from ſix to ſeven in larger ones, than in any other period of their exiſtence. We muſt take into conſideration alſo, that they are ſubject to few caſualties, and that they conſume little if any corn at all; which circumſtance, by the way, puts almoſt out of the queſtion any fair competition between them and horſes, even if the ſize and condition of fleſh were nearly the ſame. Every man, who travels poſt, knows the difference between the ſame horſe kept at graſs, or that well kept on hard meat: and the caſe exactly applies.

On theſe grounds, it is abſolutely neceſſary that your readers ſhould be undeceived as to the comparative powers of the horſe and the ox; the difference between which, even under circumſtances adverſe to the latter, will be leſs than they will readily conjecture. Two inſtances in point have occurred within theſe two months paſt. My authority for the firſt I give; of the ſecond I was an eye-wineſs. At the laſt meeting of the Dublin Society, there were many ploughs entered for the prizes given; and, to the ſurpriſe of every one, the oxen beat the horſes in ſpeed. They were worked in pairs only, without drivers. Theſe were not oxen ſelected from the moſt eſteemed breeds for labour, but the oxen of that country. Many of the ploughmen who contended for theſe prizes, were from the Lothians and Tweedſide. This I learned from Mr Rennell, whoſe knowledge and accuracy in matters of this ſort, thoſe who know him will vouch for.

At a meeting held the end of May laſt, at Barnham Wyck in Eſſex, for three prizes given, more than twenty ploughs ſtarted, three of which were worked by pairs of oxen each, without drivers. The oxen were bred on the eſtate, and of a ſort which are deemed by no means well adapted to labour. The horſe ploughs were

were picked teams. The difference of time in finiſhing the work allotted, was, to the beſt of my remembrance, about twelve or fourteen minutes between the average of the horſe and ox teams; ſo that, ſuppoſe them to be an hour and a half longer in their day's work, the difference in the time of reſt will be, if any thing, in favour of the oxen; becauſe animals which perſpire by the tongue, need not that dreſſing and care which thoſe demand, whoſe perſpiration eſcapes by the ſkin.

I beg to be conſidered as no friend to new ſyſtems where eſſential benefit will not reſult; for we who practiſe huſbandry, are too often the children of prejudice, and a change of ſyſtem is always painful to effect. Where an acre of land, or more *per* day, all deſcriptions of work conſidered, is ploughed by a pair of horſes, there is no reaſon to complain; the proprietor might benefit ſomething by the change; but, as a queſtion of public ſupply, it is moſt material to conſider, that our labour may be done, and well done, by animals which, having attained their full growth, we eat, rather than by thoſe which, after the ſame period, become daily of leſs value, and eat us.

Recurring, therefore, to my firſt requeſt, that, in labouring to promote the public intereſt, we ought to do it by means the moſt conciliating, I have to obſerve, that dictatorial opinions, unſupported by reaſon and proof, have no right to find their way into a work of this nature; nor can they long be found there, without injury to the work itſelf. One hundred years after the union of two kingdoms, we have no right to talk of ſeparate intereſts; but if ſuch a plea is to be urged, allow me to add, that I have an equal intereſt in the landed improvement of both; and rely on it, Sir, both the North and the South have ſomething to learn from, and ſomething to teach, each other. On theſe grounds it is that I beg leave to ſay, ſhould any experienced farmer have occaſion to viſit that part of the South where my buſineſs lies, a letter from the Publiſher of your moſt excellent Work will be his paſſport, and will ſecure to him the beſt hoſpitality my houſe, ſuch as it is, affords, that he may have leiſure minutely to examine our practice, and that of the country in which we are placed: there are no other means by which profeſſional queſtions, and thoſe too of great importance, can well be ſolved. In the mean time, if any of your readers are deſirous to know what our rate of labour is, I will, in a few words, ſtate it. We break in our oxen to labour at three years old: the firſt half year's work is eaſy. We ſell them to graziers at ſix years old, and in eight months they come to Smithfield good beef: In the intervening period, my work is done at the rate of about 80 acres of tillage to four oxen; and my twelve oxen, not including the three years old, will work 30 acres of land *per* week, when not employed in carriage

riage of lime or manure, which is 10 acres *per* week for each four oxen, or 5 acres for each pair; that is, 2 acres *per* day, for five days in the week, for each team of four, leaving them two reſting days: their day's work is done in ſeven hours and a half, which gives them ſixteen hours for reſt. If corn was allowed them, they would probably do more: if they did leſs, I would not uſe them at all. I allow one horſe to every hundred acres of land for extra work, and no more.

It may ſuggeſt itſelf to ſome, that an increaſed uſe of oxen in labour, by keeping employed thoſe animals which would otherwiſe become part of the ſupply at an earlier period, increaſe our preſent difficulty; ſo it might. I would even prefer to endure a preſent privation, to ſecure a permanent and moſt important good. Be perſuaded that, after the ſhort period of three years, the foundation being thus laid, the ſupply would thenceforward be regular and abundant. For the ſupport of our navy, we have no right to depend on Ruſſia. In Ireland, cattle are getting ſcarce; in this kingdom, far more ſo. But I beg pardon; I have preſſed theſe arguments elſewhere, and forget that at preſent neither you nor the majority of your readers, ſee this matter in the light I do. I have the honour to be,

Sir, with great reſpect,

SOMERVILLE.

*Edinburgh, July* 22. 1803.

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*Note by the Conductor.*

We are highly obliged to Lord Somerville for the above communication, and obſerve with ſatisfaction that the general tenor of our work is agreeable to his Lordſhip. It is our duty, however, to ſay, that the criticiſm given by our Reviewer applied only to the quantity of work ſaid to be executed by Mr Ducket's hand-hoe in a given ſpace of time, and was not connected in the ſmalleſt degree with the general utility of the implement. We are equally advocates with his Lordſhip both for horſe and hand-hoeing, and will be extremely happy to receive from him ſuch information as may ſerve to demonſtrate the advantages of both.

With regard to giving dictatorial opinions in our work, unſupported by reaſon and proof, we diſclaim the imputation. We are friends to truth, and to the practice of rational huſbandry. So far as concerns us, the opinions given have been, and will continue to be, guided by practice and experience: but it is difficult to regulate a popular work upon one uniform principle, eſpecially where it is ſupported by ſuch a numerous body of correſpondents. N.

# BRANCH III.

## Agricultural Intelligence.

The weather, during the ſummer quarter, has been of an anomalous deſcription, and rather unfavourable to the growth of corn and graſs; particularly in the eaſtern diſtricts of the iſland. The month of May was exceedingly cold; a ſevere drought prevailed, accompanied with ſtormy winds, which, in a manner, extracted every particle of moiſture from the ſoil. In the firſt and ſecond weeks of June, ſome genial rains were received, which revived the fields very much; but, ſince the middle of that month, the weather has been generally dry, latterly very warm, conſequently auſpicious to the wheat crop during the blooming proceſs, but unfavourable to the late barleys, to the vegetating of turnips, and to the growth of graſs. Under theſe circumſtances, the current crop does not promiſe to be bulky; though, from the tenor of our information, it may, on the whole, be regarded as equal to that of common ſeaſons. No doubt, much depends upon the ſucceeding month of Auguſt; therefore opinions, at this period, muſt not be too ſtrictly applied. It is ſufficiently underſtood, by practical agriculturiſts, that not only the quality, but alſo the quantity, of grain is regulated by the warmneſs and temperature of the weather in the two laſt weeks of July, and two firſt weeks of Auguſt; for the beſt-founded expectations of the huſbandman are often diſappointed by rains, fogs, and winds, at that critical period.

The grain markets have ſhewn a diſpoſition to advance through this quarter; but perhaps the fall of ſtocks, and contraction of credit, may ſerve to occaſion a temporary declenſion. From all the accounts tranſmitted to us, it appears that there is no want of grain, eſpecially of barley, in the country, which, at leaſt in North Britain, remains undiſpoſed to a conſiderable extent. It deſerves notice, that, when a riſe or fall of markets is mentioned, reference is uſually made to the prices of former times, without attending that the rate of rents, the value of labour, and the enormous increaſe of public burdens, render it impracticable for the farmer to ſell his commodities upon the ſame terms as he did even a few years ago. In our remembrance, and we do not allude to a diſtant period, more money was made by ſelling oats at twelve ſhillings *per* boll, than can now be gained when they are at eighteen ſhillings. In fact, at the laſt price, they are lower to general conſumers, for the wages of labourers and artiſans are increaſed in a greater degree than the prices of grain have advanced.

advanced. If a cultivation ſuperior to that of former times had not been generally introduced, and the produce of a given ſpot of ground conſiderably augmented, it is obvious that the great body of agriculturiſts would inevitably have been ruined by the circumſtances condeſcended upon.

Cattle and ſheep, of all deſcriptions, continue to maintain high prices; and it is probable that a greater riſe will ſtill take place in the market value of theſe articles. Under this head, it may be remarked, that the value of butcher meat bears a greater affinity to the value of money, than other articles of farm produce; which is a circumſtance that ſeems to deſerve inveſtigation. Were we diſpoſed to hazard an obſervation upon the cauſes which have depreſſed grain below its value, we would put a conſiderable weight upon the tendency and operation of our corn laws, which, though apparently calculated to keep prices from ſinking, do, in reality, prevent a fair and equitable riſe. The limits, which we devote to this branch of our work, do not ſuffer us, however, to enter upon ſuch an inveſtigation, though it may afterwards be taken up. We may only add, that, when the reſtriction againſt importing cattle from Ireland was removed, the moſt of Engliſh graziers thought the breeding trade of England would be annihilated, as rents and every other thing were lower in the former country. No ſuch event however has taken place; and, in like manner, it is highly probable that a free corn trade would be attended with beneficial conſequences. We are hoſtile to every reſtraint upon trade, unleſs ſo far as the public revenue is concerned; and believe, the alone way to make any trade flouriſh, is not to interfere with, or ſtop its progreſs by fiſcal regulations.

We obſerve, with a good deal of ſatisfaction, that Government are now diſpoſed to conſider the internal improvement of the country as an object of importance; and, aſſuredly, the ſcene fingled out for their firſt operations, is judiciouſly choſen. The Highlands of Scotland cannot be improved by ordinary exertions; and no private fortune is equal to the great and ſtupendous undertakings that are in contemplation. Without extraordinary aſſiſtance, the Highlands, in the courſe of a few years, would have been reduced to a mere ſheep waſte; but by the meaſures now going to be ſet about, the moſt beneficial meliorations may, in proceſs of time, be accompliſhed. By making roads, building bridges, and, in fact, rendering the country acceſſible, a door is opened for the introduction of trade and manufactures; and, at all events, employment is in the mean time provided for the deſtitute inhabitants. We conſider the CALEDONIAN CANAL as the moſt uſeful and public-ſpirited work ever undertaken in Britain; and venture to predict, that it will be regarded, by future hiſtorians, as the moſt prominent meaſure of the preſent reign.

Lewis

Lewis XIV. of France did more good to his kingdom, and gained more laſting honour to himſelf, by executing the celebrated canal of Languedoc, than by all his warlike and political exertions; and, ſo long as mankind are poſſeſſed of common ſenſe, they will beſtow greater praiſe upon the authors of meaſures calculated to promote their welfare and proſperity, than upon thoſe who waſte their treaſure and their blood in the execution of ſchemes, brilliant perhaps at the time, but tending only to ſpread miſery and woe over the face of the earth. The expence, of ſuch works as are now to be executed in the Highlands, ought always to be defrayed out of the public purſe. It is a triſle to the whole body, but an immenſe ſum to the few individuals immediately concerned. Were a ſyſtem like the one now, for the firſt time, adopted, to be ſteadily adhered to, Britain, at no very diſtant period, might be transformed into a kind of terreſtrial paradiſe; the people would get employment at home, and be rendered contented and happy; the trade and agriculture of the country would flouriſh in a degree greatly exceeding that of former times; and the national income (which to the public is the ſame thing as that of individuals) would increaſe in direct proportion with the meliorations produced.

While we ſtate the benefits which muſt follow a ſteady adherence to the ſyſtem now mentioned, it is but juſtice to recogniſe the ſource from whence the meaſures, now going to be executed, may be ſaid to have proceeded. We early conceived a favourable opinion of Mr ADDINGTON's adminiſtration, and on various occaſions have paid our tribute of approbation to the wiſdom of his meaſures. Formed by nature with the moſt happy and conciliating diſpoſitions, he regulates his conduct by the dictates of the public mind, and never perſiſts in forcing forward political regulations, if they are generally diſagreeable. A Prime-Miniſter has it in his power to do a great deal of good, and likewiſe to do much harm. When the country are bleſſed with one that ſtudies to patronize objects connected with internal proſperity, they have cauſe to rejoice. Nay, the people are called to do more: They are in duty bound to ſupport the adminiſtration of ſuch a Miniſter with vigour and perſeverance, leſt in the event of a change their intereſt ſhould ſuffer or be neglected.

That indefatigable patriot, Sir John Sinclair Baronet, on the preſent occaſion, alſo claims our notice, having communicated to the Committee of the Houſe of Commons, appointed to conſider the plans for the improvement of the Highlands, a number of judicious hints, the ſubſtance of which is given in the firſt branch of this number. Sir John is likewiſe engaged in extenſive ſchemes for the improvement of the county of Caithneſs, a ſketch of which he lately tranſmitted to us; and we are extremely ſorry that our confined limits

limits reſtrain us from doing more than merely mentioning them. He is at preſent buſy in improving a ſheep farm, on a great ſcale; cultivating a ſhare of a large common, which is chiefly allotted by him to the ſmall farmers removed from the ſheep farm above mentioned; eſtabliſhing an inland village at Halkirk, and a fiſhing village at Brodieſtown. The extenſion of the town of Thurſo alſo claims a principal part of his care; and, in ſhort, he is doing more for the improvement of his native county, than perhaps was ever attempted, in any inſtance, by a ſingle individual of his rank and fortune. We admire the unabated zeal of the worthy Baronet, and remark with pleaſure, that no difficulty is too great for his exertions. In a word, he never loſes ſight of his object, but ſteadily perſeveres till it is accompliſhed.

In our laſt we diſcuſſed, at conſiderable length, the queſtion, Whether Scotland was able to pay a malt-tax of equal extent with England? and gave it as our opinion, that, if levied in both countries at the ſame rate, fatal conſequences would enſue to our agriculture. If we were right, (and public opinion ſeems now to be on the ſide we eſpouſed), then theſe conſequences muſt be dreadfully increaſed by the heavy additional burthen, ſince impoſed, of two ſhillings per buſhel; which in fact will amount altogether to a tax of twenty-two ſhillings and ſixpence per Linlithgow boll of barley, malted in Scotland; whereas the ſuperior barley of England will only pay about twenty-ſix ſhillings and ſixpence. We find no fault with the tax, merely as a matter of revenue, if it had been impoſed upon juſt principles; that is to ſay, had Scots barley been taxed in proportion to its real value: but as this is not the caſe, every argument, formerly uſed, receives additional force. In fact, if the preference then amounted to ſix ſhillings per boll, on the ſide of Engliſh barley, it is now augmented to double that ſum at leaſt, though perhaps local circumſtances may prevent this preference from operating regularly in our markets. Except in particular ſituations, Scots barley cannot now be malted but under an inevitable loſs, unleſs it is ſold at a price below its real value. We ſay, its real value; becauſe the price is artificially depreſſed by the operation of heavy taxes, on all the ſtages of manufacture; and this artificial depreſſion ought to be conſidered, when the propriety of an equal tax is diſcuſſed.

Still, under theſe circumſtances, there is cauſe to believe that the matter will ſoon be adjuſted upon fair and equitable principles. Mr ADDINGTON has promiſed that a Committee ſhall be appointed early in next ſeſſion, for aſcertaining the relative qualities of the barleys of both countries; and here we reſt our hopes. If a proper Committee are appointed; if they are men

poſſeſſed of profeſſional knowledge, or even capable of pronouncing upon the evidence that will, of courſe, be laid before them, then little doubt need remain but that their report will ſatisfactorily ſhew that the barleys of North Britain are unable to pay the ſame tax as thoſe raiſed in the ſouthern diſtricts, where ſoil and climate are confeſſedly better calculated for raiſing that grain in perfection. What is to be made of Scots barley, in the mean time, is a queſtion not eaſily anſwered. An act allowing a free exportation to any place where it could be vended, would have been but common juſtice: as matters ſtand, it will lye on hand, a dead article, to the great loſs of the owners.

A memorial, on the malt buſineſs, from a number of gentlemen who met at Edinburgh in the month of April laſt, was ſent us; but, with ſubmiſſion, we are in duty bound to remark, that the meaſures recommended by them were not calculated to procure the relief wanted. They propoſed to let the Scotch tax ſtand as it was enacted, and to burden the public with a duty upon all Engliſh barley imported into Scotland. This, to a certain extent, might have benefited the farmer, but it would have taken a ſum exactly of the ſame extent out of the pockets of the public at large. In other words, Scotland would have paid 20,000l. or perhaps 50,000l. more of taxes, merely that the malt duty ſhould not be put upon its ancient and eſtabliſhed footing. But did it not occur to theſe gentlemen, that a decided oppoſition to the meaſure would be ſhewn by the Engliſh members? If you tax our barley, we will tax your cattle; and certainly the reaſons for each, if weighed in the ſcale of public juſtice, would have been nearly of the ſame gravity.

It is not an object of this work to examine public meaſures farther than they affect the intereſt of agriculture; and, in this point of view, a few obſervations will not be irrelevant, on the income or property tax, which will bear hard on many farmers. We do not mean to inquire, whether in this caſe the tax is not altogether preciſely the ſame thing as a new land tax, which ought to have been impoſed in the ratio marked out by the articles of Union. But, leaving this point to political inquirers, we confine our remarks to the tax, in ſo far as it operates upon the poſſeſſors of land; and here it may be pronounced to be partial and oppreſſive in ſeveral reſpects.

In the firſt place, it is partial, becauſe impoſed in different degrees upon the ſame claſs of people, ſome being rated at 1d. others at 2d. 3d. &c. and many at 6d. per pound of the rent paid by them to the landlord, while every farmer below 60l. eſcapes altogether. Now, a ſcale of this kind is not uſed in the collection of other public burdens, but every perſon pays according

cording to his means, or, more ſtrictly ſpeaking, according to his abilities. If the tax was meant to be upon rent, no difference ought to have been made in the *per centage*, whether the rent amounted to five pounds, or five hundred pounds: The conſequences of ſuch modifications and exemptions will occaſion an impoſition of freſh burdens at an after period, beſides opening a door to frauds and abuſes.

The tax upon the poſſeſſors of land may, in the ſecond place, be viewed as oppreſſive, becauſe it falls heavieſt upon thoſe who are leaſt able to pay it. Every man who poſſeſſes under an old leaſe, conſequently paying leaſt rent, will be ſlightly taxed; while thoſe who have lately taken farms, and have hard bargains, will pay according to the rack rent; which, in many inſtances, now triples the ſums paid by the old poſſeſſors. But why tax a farmer according to his rent? Merchants and traders might, with equal propriety, be taxed according to the amount of their invoices. No other claſs of the community can be charged a halfpenny, unleſs upon actual income of one kind or other; but the farmer muſt pay, whether he enjoys a halfpenny of income or not.

Beſides, it ſtrikes us, that being a tax impoſed upon landed property, it ought to be paid by proprietors themſelves during the currency of exiſting leaſes; and here we believe we are correct, unleſs the tax had been impoſed in a different ſhape, that is, upon actual income. An *ex poſt facto* per centage upon landed rent, is exactly the ſame to the farmer, as if the rent itſelf was raiſed to that extent; therefore, unleſs in caſes where the tenant is taken bound to pay public burthens, the tax, in ſtrict juſtice, ought to be defrayed by proprietors. In after bargains, it is plain that the tenant will calculate upon the extent of this tax, and form his offers accordingly.

It is not altogether the amount of the preſent tax which calls for the attention of farmers, but it is the principle upon which it is impoſed. The ſame power that enacted a payment of 6d. per pound this year, may afterwards augment it to one, two, or three ſhillings, or any other ſum, as public neceſſity requires. If it were merely an income or property-tax, we would have been ſilent, becauſe it would not have been levied upon any perſon, unleſs poſſeſſed of income; whereas, in the preſent ſhape, a farmer is liable, whether he have income or not, and may be forced to ſacrifice his capital ſtock piece-meal, in order to defray it. When a tax of two ſhillings was firſt laid on each horſe employed in agriculture, few people thought much of the matter; but now, when raiſed to twelve ſhillings and ſixpence, the ſubject is more ſerious. As neither of theſe taxes can be laid upon purchaſers (which was held to be a valid objection againſt

the ſhop-tax), it is our decided opinion that both ſtand in need of reviſal. In fact, a direct tax upon corn, cattle, ſheep, &c. would have been more eligible; for, like the auction tax, a part of it might have been thrown upon the purchaſer. The farmers, we are firmly convinced, are well diſpoſed to bear their juſt ſhare of every public burthen; but why a diſtinction ſhould have been made in the mode of aſcertaining their property, is a problem which we leave others to ſolve.

A bill for augmenting the ſalaries of parochial ſchoolmaſters has lately paſſed through both Houſes of Parliament; and we rejoice that the ſituation of this uſeful claſs of men will now be conſiderably meliorated. Scotland, we believe, is the only European country where ſuitable attention is beſtowed upon educating the lower ranks; and, as remarked in a former Number, from this ſource may be traced the characteriſtical features of our countrymen. The advantages originally derived from the old law, owing to the depreciation of money, were however in a great meaſure loſt, and the alteration now made was become abſolutely neceſſary. On this occaſion, the public were much obliged to the Lord Advocate of Scotland and Mr William Dundas, both of whom beſtirred themſelves in accompliſhing this important and truly national object. N.

## Extracts from Private Correspondence.

## SCOTLAND.

### *Aberdeenſhire Quarterly Report.*

Since the date of laſt report, the weather has on the whole been dry; and any rains which have fallen, have been ſucceeded by cold high winds. Even in the two laſt weeks of June, when the heat through the day was very great, froſt commonly prevailed at night, and prevented that benefit to vegetation which might have been expected from the moiſture that had previouly fallen. Bear and barley, eſpecially upon land that had been fallowed, or carried turnips in the preceding year, preſent a moſt unpromiſing appearance; oats look better, and if the weather would diſplay more moiſture, might ſtill yield a good crop of grain, though it is to be feared they will be defective in point of fodder. Potatoes and peas, till within theſe eight days, have been rather backward; and clover and rye graſs, except upon rich fields, will yield a very poor return. Paſture graſs has not admitted of the uſual quantity of ſtock, and it is to be feared will not make a good return this ſeaſon.

The ſtorms from the north have been ſo ſevere as to overturn the trees upon many acres of land which ſtood the blaſts of former years, and were in a healthy and freſh condition at the time. The weather has

has admitted ſufficient work to be given to the fallow and turnip land; and where the fields have not been cleaned in a perfect manner, the poſſeſſors have either been negligent, or have had too much in hand. Owing to the want of moiſture, many of the fields ſown with turnip have not vegetated; and it is to be remarked, that the moſt imperfect braird has been gained, where the previous work was moſt perfectly performed.

Cattle, eſpecially thoſe of the beſt kind, maintain their former high prices; but ſales have been rather heavy of late, owing to the ſcarcity of graſs. Oats, and oatmeal, have experienced a conſiderable riſe ſince laſt report; and the quantity of the former on hand is but trifling. The ſtack-yards are much about the ſize as uſual at this ſeaſon of the year; and barley, or bear, conſtitutes the prominent part thereof.—*July* 11.

### *Selkirkſhire Quarterly Report.*

The weather took an unfavourable turn about the 18th April, and high winds with heavy ſhowers of ſleet and ſnow prevailed for ſeveral weeks thereafter. It was apprehended that the lambing ſeaſon, upon account of theſe circumſtances, would be unfavourable; but owing to the forwardneſs of vegetation, and conſequent good condition of ſtock, leſs loſs has been ſuſtained than might have been apprehended.

The grain crops may be about ten days later than in an average of years. Oats experienced cold weather in tillering; conſequently remained long in what we call the *ſpaining braſh*. Barley, on loamy haugh lands, appears to be equal to an average; but on the higher grounds, the aſpect is unpromiſing. From imperfect ſeed being ſown in ſeveral places, the braird is very defective; which proves, that great caution ought to be uſed in *feeding* the higher diſtricts, after ſuch a ſeaſon as we experienced laſt year.

The dryneſs of the weather has been favourable to the working of turnip fallows, but the ſame cauſe has occaſioned the braird of thoſe firſt ſown to be nearly deſtroyed. Since the introduction of turnips into this country, much benefit has been derived from their cultivation. A few years ago, though the farmers had their arable ground in the moſt approved rotation, yet as they applied their turnip crop to the feeding of caſt or *yeld* cows, which paid them but indifferently, the advantage was little in compariſon with that now gained. The profit is double in the new method of uſing turnips, which is, to give them to young ſheep upon the ground betwixt the old and new graſs, excepting a few reſerved for the young cattle. By this practice, and omitting the milking of ewes, an addition is made to the quantity and quality of wool, and to the health and beauty of the ſeveral animals.—*July* 13.

### *Extract of a Letter from the diſtrict of Carrick, Ayrſhire, July* 14.

'The weather, during the latter part of April, and nearly the whole of May being uncommonly cold, with violent and boiſterous north and north-weſt winds, and frequent ſhowers of hail and ſleet, did conſiderable injury to the young crop, by chilling and even deſtroying the braird.

The new husbandry being only in its infancy in this district, our staple crop may be said to be oats, with a small proportion of wheat, and some bear and barley. The oats being in a state to feel the effects of the cold stormy weather, are in many places rather thin, and at least a fortnight behind the usual time of shooting. The almost total want of snow during winter, and exposure to severe naked frost, has also rendered the wheat generally thin, which is the case too with the sown grass in all heavy lands, especially if they are any way high lying or exposed. The bear appears to be the most vigorous and prolific crop; but which, from the operation of the new malt act, will probably turn out of least account to the farmer. Indeed, except for family uses, it is doubtful if there will be any sale for it whatever. It is not to be supposed that a public brewer or distiller will choose to pay 26s. 2d. of duty for 8 bushels of Carrick bear, when he can have the same quantity of the best English barley for only 5s. 4d. more. We must of necessity have public burdens, but they should be laid on wisely and impartially. The weather, since the latter end of May, has been uncommonly fine. A great deal of thunder happened about that time, which purified the atmosphere; and being succeeded by heat, and kindly refreshing showers, recovered the crop more than could have been expected. The stalks, though rather thin, appear to be in a strong and healthy state; and such of them as have shot, the heads seem to be sufficiently large and full eared; which is all that can be known of them in their present state. Much depends upon the weather during the ensuing five or six weeks. If it continue favourable till the ear is come to maturity, we will, notwithstanding of its thinness, have nearly an average crop.

'The grain markets, during winter and spring, remained pretty steady. The oat meal sold from 17s. 4d. to 18s. 8d., which is now advanced to 20s. the boll of 8 stones Dutch weight; barley meal was at about 1s. the peck; oats from 16s. to 18s. 6d. the Ayrshire boll, consisting of 8 bushels, now 20s. and 21s.; bear sold at about 25s.; and the barley about 2s. 6d. and 3s. more.

'Sheep and black cattle have gone on increasing in price since last year, and are out of all proportion high. A reduction must unavoidably take place, otherwise the luxury of butcher meat will be confined solely to the higher ranks; and those, of course, whose hard labour requires strengthening aliment most, must be utterly deprived of it. As a counterpoise, however, to this, the price of farm labour has kept pace with the price of every thing else. It is a most happy circumstance, that, in the physical, as well as moral and political worlds, things often operate their own remedy, without any foresight or efforts of ours. There is a *ne plus ultra* in human affairs, which sets bounds to the avarice and ambition of man, as well as to his physical powers.

'The potato oats are coming very much into use, and in general succeed remarkably well. They are both more prolific, and yield more meal, while one half seed nearly answers to sow the same extent of ground which it takes of the common oats sown in the country. Their liableness

liableneſs to ſhake, is the only diſadvantage to which they are expoſed in this ſtormy climate.'

*Roſsſhire Quarterly Report.*

During the month of May and the greateſt part of June, we experienced a cold continued drought, which checked vegetation much; but, for ſome weeks paſt, the weather has been warm, and though ſtill dry, the crops have made a rapid advance. If the preſent weather continue a few weeks longer, the harveſt will not be a late one; but, from the long drought, ſtraw will be very ſhort in many places, and hay but a ſcanty crop. Potatoes have a promiſing appearance. Much depends upon the harveſt months for perfecting and making all crops productive. All that can be ſaid at preſent is, that our fields wear the appearance of a fair average, except in ſome few places that have ſuffered by the drought.

Lean cattle have ſold remarkably high. In the month of May, from 15 to 20 *per cent.* was obtained above laſt year's prices; they are, however, now a little lower, and the demand is not ſo briſk. The rage for ſheep farming, which extends over this and the neighbouring counties, has very much raiſed the price of young ſtock. Lambs of the black-faced breed ſold at Fort-William market from 10s. to 12s.; and hogs from 18s. to 21s. There were few wedders and ewes ſold; the breeders were aſking for them in proportion to the extravagant prices obtained for young ſtock, and the buyers would not give ſuch prices. Wedders, however, are expected to ſell from 28s. to 30s.; but we entirely depend upon the ſouth country markets, and muſt be ruled by them. ——*July* 14.

*Wigtonſhire Quarterly Report.*

From the date of laſt Report till the end of May, we were viſited with uncommonly cold, and ſometimes ſtormy weather, inſomuch that both the corn and graſs crops during that period made but little progreſs. Since that time, however, circumſtances have changed; the weather has been favourable both for the purpoſes of vegetation and the preparation of the ground for the turnips—days of moiſt and dry ſunny weather ſucceeding each other in ſuch a manner as to be equally ſuitable to light and heavy ſoils; ſo that our crops, though late, in general will be good. Rye-graſs hay, the harveſting of which is well advanced, in ſome ſituations, and quite cloſed, ſeems to be a very fine crop; nay, ſo plentiful, that ſome of our inn-keepers have refuſed to lay in their ſtock at 6d. per ſtone of 26lb. ready laid down for ſtacking.

Paſture graſs is alſo exceeding good throughout the whole county: but perhaps, on account of the price of cattle, which is ſtill extravagantly high, to which we may add the general ſcarcity of money, our paſtures are lighter ſtocked than uſual; a circumſtance by no means againſt our agriculture. Can there be any doubt of one beaſt well fed paying better than three pinched in food? And what vaſt difference of

appearance have been ſeen of two fields of paſture in the early part of ſpring, where one in the preceding fall had been totally picked to the roots, and the other left with a good foggage? It is a certain fact, that light ſtock invariably tends not only to make a heavy purſe, but to improve and enrich the ſoil. Potatoes have a promiſing appearance; but, like other crops, they will be late. In no ſeaſon has our turnips been ſown under more favourable circumſtances than the preſent; but, from the little progreſs made as yet in their growth, no certain opinion can be formed of the crop.

Prices of grain have advanced but very little ſince our laſt. We have, however, ſtill a conſiderable ſtock on hand, and the demand is very limited. Butcher meat continues much the ſame as in our laſt. Wool, conſiderable quantities of which is carried to Ayrſhire, and alſo exported to England, is ſold at 13s. to 16s. per ſtone of 26lb. The quality is fit for various purpoſes—ſtockings, flannels, plaidings, carpets, and coarſe cloths.

It perhaps may not be improper here to remark, that our late turnpike act will have a wonderful tendency to advance agriculture, by turning the Commiſſioners minds to promote communication to the moſt remote ſituations by an eaſy line of road. Indeed, it is only doing the gentlemen common juſtice to obſerve, that they have ſhown an aſtoniſhing deſire for an immenſe number of *plans of new lines* of roads; but, (as we believe is the caſe almoſt everywhere), whether from the *forms* they have to go through, or from whatever other cauſe, it is long before they fix on that which appears to be beſt. For the ſake of diſpatch, it were to be wiſhed all unneceſſary forms and debates were *ſhortened;* that only real patriots were choſen our Commiſſioners on roads, whoſe diſintereſted views would invariably lead to the public good.——*15th July.*

## *Berwickſhire Quarterly Report.*

This quarter was unſeaſonably cold, with a continued drought, from its commencement till the beginning of June, when we had two ſhowery days, ſucceeded by warm droughty weather. On the 7th of July, we were favoured with a fine moderate rain, which came moſt opportunely for the recovery of the corn fields, as (excepting the dry burning ſoils), they had but juſt begun to feel the influence of the drought

The ſeaſon has been uncommonly favourable for preparing turnip fallows; and the early ſown fields have a moſt promiſing aſpect: Of thoſe ſown towards the end of June, many fields made a partial braird, but have filled up ſince the rain.

Paſturage, though it could not be called abundant, afforded a tolerable good bite upon the deep ſoils, after the rains in June; upon thin light gravels, it is looking quite brown. Hay harveſt has but juſt commenced; ſo that the ſelling price cannot yet be aſcertained: If we may judge, however, from the appearance of the fields, the crop is likely to fall ſhort of an average.

Wheat,

Wheats have a healthy appearance; but many of the winter fields are thin on the ground. Early ſown barleys look well; ſome of the late ſowings are not ſo promiſing. Oats are generally good; though this, as well as the other white crops, will in ſome caſes prove deficient in bulk, if drought continue to prevail in the interval between and harveſt. Beans are an unequal crop, ſome fields being remarkably good, while others are very indifferent; the ſame may be ſaid of peas. The fine warm weather, and the forwardly ſtate of the crop at preſent, ſeem to promiſe that harveſt will be early. Potatoes have a thriving appearance.

The prices of lean ſtock ſtill keep up, having, upon the whole, rather exceeded thoſe of laſt year. Fat has experienced little variation during this quarter. Wool meets with a dull ſale, and prices are about 10 *per cent.* lower than laſt year.——*July* 16.

*Letter from Glaſgow, July 16th.*

'The greateſt part of our oats were ſown in fine order; but the remainder, however, met with a very different reception. From about the middle of April till the latter end of May, we had a continuance of hail and rain, or cold drought. In conſequence thereof, the crop about the end of May, had but a very poor appearance. About the beginning of June, the weather became more moderate, and ſince the middle of that month it has been fine and warm, with gentle ſhowers of rain. This change has had the deſired effect on the crop; for excepting in ſome places where it has been injured by the cut-worm, the fields now look extremely well, and are as far forward as we remember at this ſeaſon of the year.

'Our hay crop will not be very abundant; it will however be of excellent quality, ſhould the weather continue good until it is ſecured, which we think will not be long.

'Wheat has a fine appearance, and although not thick upon the ground, yet, on the whole, promiſes to be a fine crop. Barley and bear look very well, but there is very little of theſe grains ſown in this neighbourhood, a great part of our farmers having ſown potato oats in their ſtead, which have a good appearance, and promiſe to pay well for the change.

'Potatoes, particularly thoſe on fine light land, look very well; and even thoſe upon wet, cold ground, have much improved in theſe two weeks paſt. If the weather continue good, they will turn out a fair crop. Little of the curl has been diſcovered amongſt them.

'We have had a conſiderable importation of grain from Ireland and America, through the ſummer months, and large quantities are ſtill looked for, which has kept our market ſteady. Little alteration has taken place in prices, for theſe three months paſt, oats excepted, which have advanced about 3s. per boll.'

State of Glaſgow Markets, July 16th.

| | | | | |
|---|---|---|---|---|
| American wheat, | 31s. to 33s. | per boll of 240 libs. | Engliſh. | |
| Iriſh ditto, | 28s. to 30s. | ditto. | ditto. | ditto. |

Dantzic

| | | | |
|---|---|---|---|
| Dantzic ditto, - | 32s. to 34s. per boll | Linlithgow | measure. |
| Britiſh ditto, - | 26s. to 33s. ditto. | ditto. | ditto. |
| Engliſh barley, - | 21s. to 23s. ditto. | Stirling | ditto. |
| Scotch barley and bear, | 12s. to 17s. ditto. | ditto. | ditto. |
| Britiſh oats, - | 16s. to 20s. ditto. | ditto. | ditto. |
| Iriſh ditto, - | 16s. to 21s. ditto. | Renfrew | ditto. |
| Engliſh beans, - | 22s. to 23s. ditto. | Stirling | ditto. |
| ——— peaſe, - | 22s. to 23s. ditto. | ditto. | ditto. |
| Scotch beans and peas, | 19s. to 21s. ditto. | ditto. | ditto. |
| Oat meal, - | 19s. to 21s. ditto. of 140 lib. Engliſh. | | |
| Ditto ditto, by retail, | 15d. to 16½d. per peck of 8 lib. Dutch. | | |
| New hay, - | 7d. to 8d. | | |
| Old ditto, - | 8d. to 9d. | per ſtone. | |
| Straw, - - | 3d. | | |

*Dumfriesſhire Quarterly Report.*

The frequent blaſts of north-weſt winds, in the month of May, with the chillneſs and froſts which generally attend them at that ſeaſon, gave an unpromiſing appearance to crops of every kind, but more particularly to thoſe upon clay or heavy ſoils; and, upon wettiſh and moſſy grounds, they were in many places irrecoverably loſt, partly, it was ſuppoſed, by froſt winds, but more evidently by the grub, or ſmall light coloured ſnail, which prevailed in very extraordinary numbers, in May and in the beginning of June. It was not in cold and moſſy ſoils alone that theſe vermin proved deſtructive: Upon light and open ſoils, and upon clover ſtubble, where it would ſeem they had been generated in the autumn before, they in ſome places eat up totally the braird, after being fully ſet in the third leaf.

Happily, however, theſe loſſes, though ſevere on individuals, were not of ſuch extent as to affect the general crop of the country. The doubtful appearances in May gave place, after the ſeaſonable rains in June, to better expectations; and the warm, clear weather which ſucceeded the rains, and ſtill continues, ſeems to promiſe an early harveſt. Wheat, even in the light ſoils of Dumfriesſhire, is a ſtrong crop, and now in ſuch a ſtate of health, and abundance of flower, as gives cauſe to hope that it may be well filled. Barley, though long backward in heavy ſoils, now looks well; and oats are generally good. The Frieſland, or ſmall early oat, is moſtly ſhot, and ſeems well headed; but it is remarked, that the potato oat, though ſeemingly healthy, is proportionally further back than in laſt and former years. Turnips ſown by the 24th June are forward; thoſe ſown later are very weak, but, as they are regular above ground, may ſtill be a uſeful crop.

Hay of ſown graſs is the moſt abundant crop remembered in this county, and is now moſtly in pikes or tramped ricks. The further back the ſpring growth, the crops ſeemed the weightier; even thoſe cut down till the end of April, having had a great growth after the rains fell. This points out to many farmers, unpractiſed in feeding, the additional advantages to be had by ſown graſſes, eſpecially upon warm

and

and dry ſoils, where they may be paſtured in the ſpring, with ſheep or light young cattle, with ſafety and great advantage. The paſtures, natural and of ſown graſſes, have been remarkably good for ſeveral weeks paſt, and have generally been capable of carrying a third more than an ordinary ſtock.

The demand for ſheep and cattle of all kinds, as might have been expected from the ſtate of the country, has been conſiderable, and the prices without much alteration. At the great fair of Staigſhaw-bank, indeed, there were diſappointments, owing to the temporary ſtop of a Bank in that neighbourhood, which occaſioned ſome embarraſſment. The fair was thought to be over-ſtocked with Highland cattle, which even gave high prices, with little or no loſs to the ſellers. Wedder ſheep, ready to be laid on feeding paſtures, were in great demand, as were young ſheep for breeding. Wedder hogs, indeed, being numerous, were not in ſuch requeſt, and were reckoned at leaſt 3s. lower than laſt year. The price of wool is not yet quite aſcertained in this quarter. The demand is not at all leſſened; and the ſtaplers are anxious to engage their quantities, but ſhy to fix the prices.——*July* 16.

## *Eaſt-Lothian Quarterly Report.*

Perhaps few ſeaſons have permitted the ground to be ſo well wrought as the preſent one; for, except on the 3d and 10th of June, and 7th of July, very little rain has fallen in this county ſince the beginning of March. However beneficial ſuch a tract of dry weather has been to farm culture, yet it has certainly ſtopped the growth of corn and graſs very much. Hay is a ſcantier crop than known in any year ſince 1785; and the paſtures have only, in few inſtances, admitted a decent ſtock. The grain crops, though inferior in bulk to thoſe of laſt year, are, on deep ſoils, ſuperior to what might have been expected from ſuch adverſe circumſtances; and wheats, in particular, promiſe an abundant return, if mildew is avoided.

The corn markets have advanced during the quarter, in the articles of oats and wheat; but barley continues uniformly to have a dull ſale, while the quantity on hand is conſiderable. Good wheat has regularly brought a higher price in Haddington market than what it has done in Marklane; which is a proof that the quality thereof is not inferior to the beſt Engliſh growth. Indeed, Haddington market, through the whole ſeaſon, has matched any in Britain; and the demand has generally been fully equal to the quantity preſented.

Thoſe who ſowed turnips before, or immediately after the rains on June 10th, have a fine ſhow of healthy plants; but as the weather in a few days became very dry, ſuch fields as were ſown after the middle of the month have not a very promiſing aſpect. In moſt caſes, however, a tolerable braird is got, and a ſmall ſupply of moiſture will ſoon puſh the young plants forward. Potatoes, in general, look well; and, where care was beſtowed to procure freſh ſeed, few curls are diſcerned.

For

For ſeveral days paſt, the weather has been remarkably warm; conſequently favourable to the wheats which were in bloſſom. The ſpring ſown wheats promiſe to be but a few days behind the winter ones at harveſt; but, owing to the ſeverity of the drought, the growth of the former have been greatly ſtinted, eſpecially upon gravelly ſoils, or thoſe of a light deſcription.——*July* 20.

## *Mid-Lothian Quarterly Report.*

Since laſt Report, the weather has been almoſt uniformly dry, and latterly very hot; but, from the uncommon goodneſs of the ſeed time, and fineneſs of the mould, the corn crops look much better than might be expected. Wheat has mended conſiderably. Many fields, however, are ſmall in the ſtem, and conſequently will turn out thin. Upon the whole, although there are few or no fields of any ſpecies of grain that can be deemed rank; on the contrary, many fields are very ſhort; yet, with a moderate quantity of rain, and an exemption from high winds, there is every probability that the crop will prove productive.

However, ſuch a long continuance of drought has burnt up the paſtures, and hay is univerſally a ſcanty crop, but, from being ſo well got, is excellent in quality. Indeed, the preſent crop of hay will be better worth one ſhilling per ſtone to the conſumer, than the generality of laſt year's crop was worth the low prices at which it ſold.

From the great loſs ſuſtained laſt year, by the ſhooting of turnips, many people have been induced, this year, to delay ſowing to a later period of the ſeaſon; but, where this has been adopted, the turnips have either come up partially, or failed entirely. It is an important fact, that ſeems not to be ſo generally underſtood as the ſubject merits, that the ſhooting of turnips does not depend either upon late or early ſowing; but is owing to the mode of raiſing the ſeed.

When the ſeed is raiſed from untranſplanted roots for a ſucceſſion of years, the turnips become foul in the neck; and, if perſiſted in, will degenerate ſo far, and have ſuch a tendency to run into ſtalks, that they will infallibly ſhoot, at whatever time they are ſown; for this tendency evinces itſelf ſoon after the young plants are ſingled out in the drill, by three or four ſtems ſpringing from the ſame root, which, in many inſtances, prevents the turnips from ſwelling; or, if they do ſwell, they are more open, ſpungy, and leſs nutritive, as alſo more liable to be injured by froſt, than ſound, compact, well formed ones are. This evil can only be remedied by thoſe who raiſe the ſeed making it their buſineſs to tranſplant whenever the firſt inclination to foulneſs in the neck of the turnips occurs.

The ſummer fallows have been got into a high ſtate of cultivation; but, from want of moiſture it has proved an arduous taſk to prepare the dung properly for them. Some farmers are at pains to drive water to their dunghills, but many others cannot adopt the expedient, for want of it.

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The prices of cattle and ſheep keep as high as ever at Linton market. The current price of hogs was from 16s. to 18s.; and lambs, at Biggar fair, from 8s. to 10s. 6d. a head. The principal demand for both was to the north country. Hitherto, fat cattle have been bought by the butchers as ſoon as they were fit for the ſhambles; and have ſold at 10s. 6d. and 11s. per ſtone Dutch, ſinking the offal; Beef and Mutton at 8d. per lib. 17½ oz. to the lib.

The number of Engliſh dealers who commonly buy up cattle in the north country, have been fewer than uſual, owing, it is ſaid, to the failure of ſome country Banks in the ſouth. But this want has been made up, by Scotſmen carrying on that buſineſs, to a greater extent than uſual, themſelves; ſo that, hitherto, there have been no want of purchaſers; and there is every reaſon to believe that the demand will increaſe, whenever the quantity of keeping becomes more plenty.—*July* 20.

## *Argyleſhire Quarterly Report.*

The end of ſpring, and the beginning of ſummer, did not promiſe very favourably to the crops of this county. Fields that were wet and cold, ſuffered much loſs from the grub-worm; an inſect, which, if we may judge from its viſible effects, ſeems to have moſt vigour in that ſort of cold and wet weather which benumbs other tribes of animals and inſects, and renders them torpid and inactive, or altogether kills them. The numbers of theſe vermin that were to be ſeen in many fields this ſeaſon, when a handful of earth was turned up, was very alarming. It is probable that a heavy roller drawn over ſuch ground as would admit of it, would deſtroy a very great proportion of them. The experiment, at leaſt, would be attended with no great expence or trouble.

But, notwithſtanding the partial depredation of theſe worms, and the unpromiſing appearance of many fields in the beginning of ſummer, the crops in general look now extremely well, and the worſt fields have wonderfully mended ſince we have been viſited with warm weather and and refreſhing ſhowers. The harveſt, however, will not be early.

Cattle of all kinds continue to ſell at very high prices, though ſomewhat declining of late. About Whitſunday, ſome ſtocks of ſheep in this county, ſold ſo high as from 28s. to 30s. the ewe and lamb. The prices of wedders and of wool, are generally regulated in this county by thoſe of the Fort William markets. The temporary check experienced by our manufactures, muſt of courſe affect the graziers. Meal continues ſtill at a moderate price, though a little advanced, being 1s. 6d. the ten lib. Butcher meat from 6d. to 7d. the Engliſh lib. Butter from 13d. to 14d.; and cheeſe (new) 4d. the Tron lib.—*July* 16.

## *Tweeddale Quarterly Report.*

About the 18th April, the weather changed from almoſt the mildneſs of ſummer to the ſeverity of winter, and continued to blow, ſnow and

and hail with few intermiſſions, for ten days thereafter: during which time, little could be done in potato and barley labour. As the lambing time then commenced, we were under great apprehenſions of ſuſtaining a heavy loſs from the inclemency of the weather; but the good condition of the ſheep prevented our apprehenſions from being realized.

Although there was much doubt about the ſoundneſs of ſeed of laſt crop, yet every kind of grain hath planted thick enough. A good deal was purchaſed from the coaſt counties, which, with the old grain then on hand, went far to ſow the preſent crop; but, even where doubtful ſeed was uſed, there appears to be but little deficiency. At preſent, the crop promiſes to be good; and if the remainder of ſummer continues to be favourable, harveſt will not be very late. Early ſown turnips look well, but thoſe ſown in the latter end of June, are planting very irregularly.

The markets for live ſtock, are ſtill as high as ever; and the demand for good horſes, eſpecially for the Yeomanry, occaſions many purchaſers. Wool has rather a dull ſale, the preſent uncertain ſtate of public affairs preventing the ſellers from condeſcending on poſitive prices. Wedder hogs have ſold from 15s. to 18s. 6d.; ewe do. from 13s. to 16s., the latter being much in requeſt. Thoſe ſold, are generally ſhots; the top ewe hogs being reſerved by the breeders for keeping up their ſtocks. Grain of all kinds has lately advanced conſiderably in price.—— *July* 12.

*Letter from a Farmer in Roxburghſhire, July* 16.

'During the month of May we experienced very cold weather, and, owing to the ſeverity of the drought, turnip land did not work kindly. Some fine rains in the beginning of June improved both corn and graſs conſiderably; but ſtill appearances are not very flattering. Winter wheats are thin. Oats very ſhort, and barleys threaten to be much below an average. The firſt ſown turnips brairded quickly, but are now rather at a ſtand; thoſe laſt ſown are making little progreſs. Hay is very light; and potatoes, particularly thoſe planted early in the ſeaſon, are much infected with the *curl*. The grain market continues dull, and ſales are ſlowly made. Beef and mutton for ſix weeks paſt have ſold well, but lean ſtock at ſtill higher prices, which does not augur a reduction at the end of the ſeaſon. At the fairs of Yetholm and Earlſton, the demand was conſiderable; but the recent ſtoppage of the Newcaſtle and Berwick Bank occaſioned great inconvenience to the purchaſers, much paper being ſhown that would not paſs with the ſellers. Wool has dropped in price. Combing wool about 2s. per ſtone, and ſhort fine kinds rather more.'

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## ENGLAND.

*Letter from a Scots Gentleman, dated Brighton, May 28.*

'I had a pleaſing jaunt to London; but was diſappointed in my intentions of going to the Continent, by the alteration which took place in the political ſituation of the country. During my ſtay at Dover, I took occaſion to viſit ſeveral parts of the County of Kent, the ſoil of which is generally incumbent upon chalk. The interior part of the county is full of wood, the ſurface riſing into gentle hills, while the vallies are only cultivated. When you come within eight or ten miles of the coaſt, there is ſcarce any woodland; but the whole is either cultivated, or ſuffered to remain in green paſture; and many parts of the coaſt land conſiſt of excellent ſalt marſhes, which are drained with the greateſt care. The crops, in general, look miſerably thin; and as for paſtures, they have few or none, tares and artificial graſſes ſupporting the ſtock. Peas and beans are the beſt crops of Kent at preſent; they are ſown in drills, and kept exceeding clean and neat. The weather has been exceſſive cold all this month, froſty during the night, and cold winds in the courſe of the day.'

*Norfolk Quarterly Report.*

The ſcience (if the expreſſion is allowable) of Agriculture is now very judiciouſly deemed a grand object of national importance, whilſt the adoption of more effectual methods for its encouragement and improvement, and the many ſpeculations on the ſubject, are very wiſely rendered ſubſervient to the purpoſes of practical huſbandry. Though the path, which leads to ſpeculations on the probable produce of the growing crop, is extremely liable to lead an amateur aſtray, and perhaps is one of the humbleſt in which he can tread, yet, if due caution is uſed, he will not often wander far out of the right way, and may probably pick up ſome reflections in his walk, that will not prove utterly deſtitute of intereſt, nor wholly void of utility to future experimentaliſts. If, therefore, the following obſervations, made with ſome degree of attention, are thought worthy of inſertion in your Magazine, they are very much at your ſervice.

The ſeaſon for ſowing the ſpring corn and pulſe proved extremely favourable; the land pulverized well, was ſufficiently moiſt, and the corn vegetated rapidly and fully. Some froſty mornings, however, intervening in the month of May, rendered the proſpect leſs inviting. The early ſown fields began to wear a yellow, ſickly appearance; but fine mild ſhowers ſoon falling, diſſipated all apprehenſion; and the continuance of moiſt weather, through the month of May and the early part of June, has given us at this time the flattering proſpect of a more than average crop of barley, oats, and peas and beans; though, where it might leaſt have been expected, on ſome light ſoils, there appears a conſiderable deficiency; the inceſſant and extremely cold rains almoſt ſtarving the plant to death, ſcarce a friendly cheering ray of ſun having made its appearance during the month of May and beginning of June.

Sowing

Sowing wheat upon the flagg is very much practiſed in this county; but, owing to the long and ſevere drought after the late harveſt, and the conſequent impoſſibility of ploughing up the graſs leas, in the early part of the ſeaſon, this operation was performed unuſually late; and the ſevere froſt, finding the plant throughout the winter unprotected by a friendly covering of ſnow, injured it very materially. The plants upon the light lands ſtand very thin, conſequently liable to ſtill farther injury from mildew and high winds, and not at preſent to be eſtimated at more than two thirds of a crop; but upon the heavy lands the wheat certainly promiſes to be very good. No part of the harveſt can be early.

The winter vetches did not eſcape with leſs injury than the wheats; but the ſummer vetches promiſe, however, a luxuriant crop, that may make amends for the penury of the elder branch of the family. The artificial graſſes, though a full plant, are very ſhort, and will yield but a ſcanty crop of hay.

Turnip ſowing will be chiefly finiſhed in the courſe of this week: ſome, early ſown, owing to heavy cold ſhowers, have failed: the lands muſt be ploughed and ſown again: but the weather, during the laſt fortnight, has proved particularly favourable, and the ſeed vegetates very expeditiouſly; a moſt deſirable circumſtance, as the plant acquires the rough leaf early, and by that means ſoon bids defiance to one of its moſt formidable enemies, the fly. Various are the manures uſed, and equally various the modes in which this valuable plant is cultivated: It certainly deſerves all the attention it receives; for if it fails, very ſmall are our hopes of a productive crop of barley; we may juſtly ſay it is the *ſine qua non*. The drill ſyſtem is very prevalent, at diſtances of ten, twelve, and eighteen inches; the latter are ſometimes moulded up with the plough, when they have nearly attained their full growth, to preſerve them from the froſt; and when the operation is ſkilfully performed, it is generally attended with very encouraging ſucceſs. The Swediſh variety of the ſpecies is now much cultivated and eſteemed; the good qualities aſcribed to it are theſe—it is very firm, and conſequently heavy; more nutritious than the common ſort; bids defiance to the ſevereſt winters, ſeldom or never rotting, though previouſly injured by the tread or bite of beaſt or game, the latter being particularly fond of it, and will travel a conſiderable diſtance in ſearch thereof, refuſing to taſte the common ſort in the way; a preference which, in the neighbourhood of much game, is a ſerious inconvenience to the grower. Oil cake is a manure very frequently uſed for turnips, ſown either broadcaſt, a ton to four acres, and ploughed in before the ſeed is ſown; or by a drill machine, which is made to deliver, from different cups, the cake reduced to duſt, and the ſeed into the ſame funnel; thus lodging the ſeed in the midſt of a bed of manure; the probable conſequence and great advantage of which is, quick vegetation; the beſt ſecurity, as before obſerved, againſt the depredations of the fly. A conſiderable

ſaving

ſaving of manure is alſo in this mode another object of attention, a ton being ſufficient for five or ſix acres.

The irrigators are certainly a claſs of valuable agriculturiſts, and deſerving of every poſſible encouragement, even allowing that they raiſed only two blades of graſs, where one grew before; but they produce an increaſe, in many inſtances, of more than a hundred fold; and, by firſt underdraining, and afterwards irrigating, have converted many hundred acres of mere bog, where the foot neither of man nor beaſt could tread ſafely without the utmoſt precaution, into firm ground, and produced luxuriant and wholeſome herbage for the flock and the herd. Want of water has, however, this ſeaſon, in many caſes, much circumſcribed their operations; the ſprings having been ſeveral months paſt ſo extremely low, as not to afford the neceſſary ſupply; a circumſtance which alarms alſo other deſcriptions of agriculturiſts, it being an opinion pretty generally adopted from obſervation, and not deſtitute of rational ſupport, that when the ſprings are low, the price of corn is low alſo; and *vice verſa*, when the ſtrong lands are ſaturated with water, they become difficult to be tilled, generally produce a meagre crop, inferior both in quantity and quality; whereas, the weſtern part of this county rarely complains of too much moiſture.

Upon the whole, as the barley, oats, peas and beans promiſe a full average crop, and as there will at harveſt remain a conſiderable ſtock of old wheat on hand, though the preſent appearance of the latter on the light lands is by no means flattering, it ſeems highly probable, that none of theſe articles will obtain high prices in the following winter: Indeed, an apprehenſion that they may not reach a price equal to the reaſonable hopes of the farmer is more dreaded; I ſay dreaded, for ſhould any cauſe ariſe ſufficient to damp that enterprizing ſpirit, which has lately been ſo eminently, and ſo univerſally exerted, we may become dangerouſly dependent for a neceſſary ſupply of the ſtaff of life on foreign countries. It requires a peculiarity of circumſtances and ſituations, ſuch as fall not to the lot of the generality of agriculturiſts, to induce, or indeed to juſtify them in an eager purſuit of an unprofitable ſpeculation.

The price both of lean and fat ſtock of all deſcriptions continues high.

Wool, though the war has caſt a damp upon trade, is expected to maintain a good price: The grower hopes to receive for his Norfolk and Southdown, from 50s. to 54s. per tod of 28 lib.—*July 9.*

## *Lincolnſhire Quarterly Report.*

The ſeveral crops of corn and hay in this county may, on the whole, be reported as promiſing to yield the farmer an abundant return: indeed, the ſeaſon has been remarkably favourable for our low lying lands, which are generally of excellent quality, and capable of producing a weight of grain equal to what is raiſed upon the beſt ſoils in the kingdom,

when circumſtances permit the ſeed to be ſown in a dry bed, and the neceſſary operations to be performed in a ſufficient manner.

Our wool is excellent in quality this ſeaſon; but prices cannot be reported as fixed or determined. What has been hitherto ſold has brought from 26s. to 31s. per tod of 28 lib. It is generally of the long combing kind; is vended principally in Yorkſhire and Lancaſhire, and manufactured into various ſorts of ſtuffs, viz. ſhalloons, callimancoes, &c. Wakefield and Leeds are our chief markets; it is ſorted at theſe places, and afterwards diſpoſed of to the manufacturer.

Our drainage buſineſs goes on ſlower than we expected. A doubt is not however entertained, but that the object in view will be completely obtained when the work is finiſhed. Mr Rennie, the engineer employed to direct the whole operations (who, it is well known, is fully up to ſuch undertakings), is of opinion, that, until the main outfal drain and ſluice are completed, it is unneceſſary to proceed with the internal works; and probably the plan adopted by him is beſt calculated for bringing the whole to a happy concluſion.

The ſowing of turnips has been finiſhed under favourable circumſtances; and, from the land being in excellent condition, we have every reaſon to expect a full crop of that invaluable root.—*July* 13.

*Letter from a Gentleman in the County of Cambridge, July* 14.

'I ſaw your Magazine in Norfolk, where it is in high eſtimation, and read as much of it there as my time would admit of; but as I had no thoughts, at the time, of writing for it, I did not attend minutely to your plan; therefore, at preſent, can only ſend you a general letter. If this, however, proves acceptable, I ſhall probably try to write more congenially to your plan next quarter.

'When in Norfolk, I found the crops very good on all rich loamy ſoils that were well managed; but on all light ſandy ſoils (with which Norfolk abounds, I think, more than any county in Britain), the crops in general were then very light, though I have no doubt but that the rains ſince received have greatly improved them. My opinion is, that the Norfolk farmers in general, are the beſt in England, perhaps in the world, for managing light ſoils. They commonly get good crops of wheat and barley, even on ſuch poor lands as would not be thought worth ploughing in many other counties: And this they do by managing their turnips in the beſt manner; by marling where practicable, by dibbling and drilling in their ſeed early, and by hoeing the crops in a maſterly manner. But as irrigation or improving graſs land by artificially conveying water over it, is very little practiſed, Norfolk is at preſent defective in that moſt valuable mode of enriching graſs land.

'An enterpriſing Norfolk gentleman requeſted me to point out the beſt and cheapeſt modes of improving his eſtate, which he occupied himſelf; and when I had rode over a conſiderable part of it, I told him that I did not know if I could ſuggeſt any improvements, but ſuch as he had already commenced: however, we preſently arrived at about

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100 acres of very low poor land, covered with aquatic weeds and coarſe graſſes, along the higheſt part of which ran a copious ſtream of rich water, carefully kept from flowing over this poor low land. Here I recommended irrigation, as it would ſoon double or triple the value of the land; and gave the gentleman a plan for flooding, which is to be put into execution as ſoon as convenient after the enſuing harveſt.

'In the county of Huntingdon, which I left yeſterday, the crops of grain, graſs and potatoes, are very good this year, except upon ſome of the lighteſt ſoils, where they are rather ſcanty; but upon the rich loams, eſpecially upon the new enclofed fields of Somerſham Heath, and many other places, the crops are as rich and heavy as could be wiſhed for.

'In the Great Level of the Fens (and I have reſided in that diſtrict for many years), which extends itſelf into ſix counties, and is by much the largeſt and richeſt plain in the United Kingdom, the ground is covered at this time with as many thouſands of acres of luxuriant crops of wheat, oats, hemp, beans, potatoes, graſs and hay, as ever were produced upon any ſoil. The fen hay is almoſt all ripe, and much of it is cut, and thouſands of loads already carried in fine condition. As the winter and ſpring were ſo dry, the ſeed, eſpecially oats, was ſown many weeks earlier than uſual; therefore all the grain, particularly oats, if the harveſt ſhould be favourable, will probably prove much heavier and better this year than cuſtomary. Some wheat in the fens begins already to turn of a yellow colour, and if the weather continue hot, it will be ready to cut the firſt or ſecond week in Auguſt; other grains are likely to be ripe proportionally early.

'A few weeks back, a nobleman, of firſt-rate agricultural abilities, viſited the Fens, and appeared to admire the country, expreſſing much approbation of its huſbandry. The foundation of the fen huſbandry is ploughing and burning the ſward, and then ſowing coleſeed; which, when eaten on the land, enriches the ground ſufficiently for two or three crops of oats, a crop of wheat, a crop of hay, and to graze ſeveral years afterwards; and then ploughing and burning again, without any other manure, except what dung is made on the premiſes. Though almoſt all this dung is carried to the circumjacent, and interſperſed high lands, yet the crops are generally very good, which demonſtrates the goodneſs of the fen ſyſtem. Yea, I believe the fen farmers are the beſt in the world to manage low marſhy ſoils. The fen crops this year are, as the nobleman before alluded to ſaid when he ſaw them, 'too rich,' the ſeaſon having anſwered well for all ſuch ſituations.

'The ſame nobleman was highly admired by all that heard his accurate remarks, and profound obſervations, about ſtock, fen drainage, rotation of crops, artificial ſeeds, and the management of land, &c. &c. When going over one of the beſt managed fen farms, he came to a field where ſeveral ploughmen were employed; and after looking ſome time at the men ploughing, he took hold of a plough:—the men all began to ſtare, and expected to ſee plenty of balks and blunders; but, to the great aſtoniſhment of us all, the Noble Lord ploughed his furrow as well as the fen-men themſelves: and one preſent ſaid, 'his Honour is proba-

bly the firſt nobleman that ever ploughed in the fens,' and perhaps the beſt that ever will. When he left the field, he gave the ploughmen a handſome preſent, and in the evening they all drank his health, with true rural conviviality, and probably will long remember their illuſtrious viſitor, and, with retroſpective pleaſure, often tell the tale to their fellow ploughmen, rural workmates, and admiring grandchildren.

'The markets in this, and adjacent counties, have been rather on the decline for ſome weeks paſt, but now appear at a ſtand. At Cambridge, July 2. wheat ſold at 1l. 13s. 6d. per load of 5 buſhels Wincheſter meaſure. Rye, 1l. 11s. Barley, 1l. 2s. Oats, 1l. to 1l. 1s. Peas, 1l. 18s. Beans, 1l. 10s. per quarter of 8 buſhels Wincheſter meaſure.—At Royſton, July 6. Wheat, 1l. 12s. to 1l. 13s. 6d. per load. Rye, 1l. 13s. Barley, 1l. 2s. 6d. Oats, 1l. 2s. to 1l. 4s. Beans, 1l. 12s. Peas, 2l. per quarter.—At Stamford, Wheat, 2l. 17s. Barley, 1l. 2s. Oats, 1l. 1s. to 1l. 4s. Beans, 1l. 10s. to 1l. 11s. per quarter. At St. Ives, Huntingdonſhire, Wheat, from 1l. 13s. to 1l. 15s. per load, Beans, 1l. 9s. Barley, 1l. 4s. Oats, 1l. per quarter.'

## *Yorkſhire Quarterly Report.*

The hay harveſt is, in ſome parts of this county, in a ſtate of forwardneſs; but generally not more than one third is cut. The crops are rather above the average; thoſe of clover and other artificial ſeeds are good, and from the preſent fine weather, there is a fair promiſe of much being well ſaved. Old hay has declined in price, and is not worth more than 4l. per ton.

The wheats are exuberant and flouriſhing on all ſoils, almoſt beyond example. Barley and oats are rather thin. Beans are a good average. Apples, and almoſt all the common fruits, are very plentiful; and were it not that the ſcourge of war, that diſgrace of humanity, ſeems hanging over our heads, '*every man might ſit under his own vine, and his own fig tree, and none ſhould make him afraid.*' Of rape-ſeed, little has been ſown; but flax is very luxuriant and promiſing. Much more has been ſown than in former years. Potatoes are likely to be productive, and the markets have been long plentifully ſupplied with the growth of this ſeaſon.

The weather has been highly favourable for the turnip fallows, and they are conſequently well made and manured. Many fields of this uſeful root are ready for the hoe, but few are finiſhed. The ſummer fallowing on ſtrong clays, &c. is in an advanced ſtate.

The beſt wheat is now ſelling at 7s. to 8s.; oats 2s. 9d.; rye 4s.; and beans 4s. per buſhel of Wincheſter. Wool, at the commencement of the ſeaſon, was ſold higher than even laſt year, but is now declining.

Cattle and ſheep, both fat and lean, continue at prices very encouraging to the grazier. Hogs are plentiful, and lower in price. Beef, mutton, and lamb, are at 8d. per lib.; veal 7½d. Good horſes enormouſly dear.—*July* 15.

*Eſſex*

*Eſſex Quarterly Report.*

Since laſt report, the weather has been exceedingly fickle, till within this laſt three weeks, in which period it was exceſſively hot, and afforded a fine time for the hay harveſt. Graſſes, though thin and light, have been got up in excellent order. The clover, however, promiſes a greater abundance; and ſhould the weather ſtill remain ſettled, which there is every appearance of, a finer ſeaſon will not be recollected. Tares, owing to the ſhowers at the latter end of April, have revived beyond expectation. The grain crops look well throughout the county. Wheats, which were much injured in the winter, are conſiderably improved. Peas, beans, barley, and oats, are very ſtrong and healthy. Hops, which ſhooted at firſt very unkindly, are now in a flouriſhing ſtate, and quite free from the inſect. Harveſt will generally commence in three weeks. —*July* 16.

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The following Rewards for Agricultural Improvements, were beſtowed by the Society of Arts, at their Meeting on the 31ſt May laſt.

To the Right Hon. the Earl of Fife, for his extenſive plantations of foreſt trees, and other agricultural improvements in North Britain, the gold medal.

To Lord Viſcount Newark, for encouraging the growth of oak timber, by ſowing acorns and planting oaks, in Nottinghamſhire, the gold medal.

To John Shirreff Eſq. of Captain Head, North Britain, for his plantation of oſiers, claſs 9, the gold medal.

To the Rev. T. C. Mummings, of Eaſt Dereham, in Norfolk, for his experiments on the culture and preſervation of turnips, the gold medal.

To Mr John Knapping, of South Shoebury, in the county of Eſſex, for gaining 230 acres of land from the ſea, the gold medal.

To Mr John Wright of Pickworth, in Rutlandſhire, for comparative experiments in agriculture, the gold medal.

To John Chriſtian Curwen Eſq. M. P. of Workington Hall, in Cumberland, for his experiments on feeding cattle with potatoes, the ſilver medal.

To the Rev. Edmund Cartwright, of Woburn, in Bedfordſhire, for a three-furrow plough, the ſilver medal.

To Dr H. Ainſlie, of Dover Street, London, for his plantations of timber trees, near the lakes of Windermere and Coniſton, the ſilver medal.

To Benjamin Waddington Eſq. of Lanover Houſe, near Abergavenny, for improvements of boggy land, in South Wales, the ſilver medal.

To Mr David Charles, of Weſtmead Langhorne, Carmaerthenſhire, for a machine for laying land level, the ſilver medal.

To Mr Robert Green, of Weſturrating, in Cambridgeſhire, for a drill machine for ſowing peas, beans, &c. the ſilver medal, and ten guineas.

*Northumberland*

*Northumberland Quarterly Report.*

From the latter end of April to the beginning of June, the weather was moſtly dry and cold, which checked vegetation ſo much, that at the latter end of May, the paſtures were ſeldom ever ſeen ſo bare, or the meadows ſo ſhort; but though this kind of weather was inimical to graſs lands, yet it was very valuable for working the fallows, which were in general got very clean, and in good tilth. On the 9th, 10th, and 11th of June, this diſtrict was favoured with ſome fine rains, ſince which we have had a ſeries of dry weather, (except a few ſhowers about the 8th July), and at preſent it has the appearance of continuing with increaſed heat and intenſity.

The winter wheat crops are looking almoſt everywhere thin, being ſo much injured by the froſts. The ſpring wheats are more promiſing; and it is to be hoped this warm dry weather will be favourable to the blooming, and keep them from blights and other diſeaſes.

The barley and oats on dry ſoils, have ſuffered much by the drought, and are not only thin, but very ſhort. On deep, ſtrong loams, they are very good.

Beans and peas are everywhere ſhort, but full of flower, and will probably be a better crop than if the weather had been moiſter, and the ſtraw longer.

Turnips and Ruta baga, that were ſown from the latter end of May to the middle of June, are growing remarkably well, having received the benefit of the rains in the ſecond week of June; but thoſe that were ſown after the moiſture occaſioned by thoſe rains was exhaled, have not grown ſo well; and, in ſome ſoils, have not yet vegetated.

The hay crop is univerſally complained of, as being very light.

The wool trade has been ſlow, owing to the unpleaſant proſpect of affairs, and uncertainty of markets. The Yorkſhire dealers have at laſt begun to buy. The prices for long wool is from 22s. to 25s. per ſtone of 24 lib., and of ſhort wool from 27s. to 29s.——*July* 18.

*Letter from a Farmer in Wales, July* 16.

'We are at preſent buſy with our hay harveſt, and favoured with excellent weather for the ſeveral operations. Where the land is good, the crop is abundant; but, owing to the cold wet weather of May and June, the meadows were chilled, and the produce much limited. Wheat, which in the beginning of June had a bad appearance, is wonderfully improved; and as it enjoyed a fine blooming time, we may expect the quality to be good. Barley, on clay ſoils, is bad, having never overcome the coldneſs of June. Oats generally look well, but will not return much ſtraw: indeed, the bulk of every crop will be far ſhort of what we reaped in the two laſt years. Markets for wheat and oats have lately been rather upon the advance. As for barley, there is a greater ſtock on hand than ever remembered; and, owing to the heavy duty lately impoſed upon malt, the demand is inconſiderable. The paſture lands preſent a good bite, and cattle and ſheep of all kinds maintain

great

great prices. Store pigs are much lower, and the country full of them. They will, however, be of uſe next winter in helping off with our barley.

'Wool ſells well, but varies much in price, according to the qualities. I believe we have more varieties of ſheep in Glamorganſhire, than is to be found in any other county of the ſame extent in Great Britain. Thoſe in the Vale are of a large ſize, carrying long coarſe wool, ſold generally at 1s. per lib. On the mountains, the breed is ſmall, yielding wool that ſells at double the former price. Of late years, the New Leiceſters have had a great run, being not only introduced into the low country, but uſed by the hill breeders as a croſs with their ſmall ſheep. On rich lands, the pure Leiceſters are found to anſwer well; but a mixture is preferred in all expoſed ſituations.'

*Letter from London, July* 18.

'I hand you, below, the market prices of this day, which have, on the whole, rather declined, owing to the ſtate of public affairs, and the ſcarcity of money. I am juſt returned from a jaunt through ſeveral of the weſtern counties, and had the pleaſure to obſerve, that the fields in general are loaded with as good a crop as ever I beheld. Through Buckinghamſhire and Berkſhire, wheat and beans are cultivated to a great extent, and are moſt luxuriant. The turnip fields are in as fine tilth as garden ground, and the hedge-rows neatly kept. Around Bath, the crop is but middling, but became much better in the neighbourhood of Briſtol. I obſerved ſome fields of oats near Reading, which will be ready to cut in eight days, if this favourable weather continues; but it will be three weeks at leaſt, till any thing elſe is fit for the ſickle. Through the country, there appears to be a great deal of barley in the ſtack-yards; and from the late heavy tax on malt, and the preſent appearance of the crop, the price of this article may ſtill be expected lower. By the Sound liſt, we are informed, that upwards of ſeventy veſſels are ready to ſail with foreign grain to Britiſh ports, which, in addition to the preſent abundant ſupply, muſt tend to a reduction of prices.'

State of London Markets, July 18.

| | | | |
|---|---|---|---|
| Wheat | 42s. to 52s. | Tick beans | 30s. to 31s. 6d. |
| Eſſex and Kent, | 55s. to 58s. | Oats, long feed | 19s. to 21s. 6d. |
| Fine do. | 62s. to 63s. | Short ſmalls or | |
| Rye | 32s. to 36s. | Frieſlands | 21s. to 24s. |
| Barley | 21s. to 24s. | Polands | 24s. to 26s. |
| Fine | 25s. to 26s. | All per qr. of 8 Winch. buſh. | |
| Malt | 61s. to 63s. nominal. | Fine flour | 50s. p. ſack. |
| White peas | 35s. to 40s. | Hay, from | 100s. to 135s. p. load. |
| Boilers | 47s. to 50s. | Cattle at Smithfield | 5s. to 5s. 10d. |
| Grey | 34s. to 36s. | Sheep | 4s. 6d. to 5s. |
| Small beans | 33s. to 34s. 6d. | Lamb | 6s. to 7s. |
| | | —per ſtone of 8 lib. ſink. | |

IRELAND.

## IRELAND.

[The following Letter was received too late for laſt Number; but, judging it may be uſeful, we have now given it a place.]

*Letter from a Gentleman at Dublin, April 20.*

THE FARMER'S MAGAZINE renders important ſervice to the cauſe of agriculture, by laying before the public a variety of valuable information. Every wellwiſher to the cauſe muſt be gratified to find, that the circulation of this Work is ſo extenſive, as a rapid improvement in rural ſcience muſt thereby be effected. I will be happy to render every aſſiſtance in my power, to increaſe the demand for it on this ſide of the water.

In the county Surveys, which I now do myſelf the pleaſure of ſending, you will find that the rural management, which has long prevailed in Ireland, is that of raiſing repeated crops of grain as long as the ſoil is capable of yielding any. The land is then left, for a ſeries of years, to acquire a ſcanty herbage from ſpontaneous vegetation, which, for a long time, proves of little or no value. This mode was ſo unproductive, that tillage was almoſt altogether confined to the loweſt order of landholders; thoſe of more affluence limiting their views to paſturage, badly conducted.

To induce a ſpirit for the improvement of ſtock and tillage, the FARMING SOCIETY of IRELAND was inſtituted. By the exertions and example of ſeveral of the moſt enlightened members, improved huſbandry has become faſhionable, and very generally diffuſed throughout the country. County ſocieties are eſtabliſhed in numerous ſituations, and a happy influence now prevails, for a general improvement, and for promoting the comforts of the lower orders. Theſe conſequences are of ineſtimable value.

The moſt enlightened of our agriculturiſts conſider that land, once brought into a fair tillage ſtate, may be kept with advantage, without the neceſſity of a naked fallow, under continual cropping, through means of alternate 'fallow crops,' here denominated 'green crops;' as, by means of green crops in drills, an opportunity offers of keeping the land completely clean. The culture of green crops in drills is invariably recommended; indeed the drilling ſyſtem for grain is gaining ground, Cooke's machine being much approved by thoſe gentlemen who have tried it.

A ploughing match was held here during the ſpring ſhew, which proved a very ſatisfactory exhibition, and truly intereſting. The work performed by the Leiceſter wheel-plough, and Small's plough, was excellent. The latter was declared victor.

A boat, conſtructed for the conveyance of fat ſtock, lately fitted up, has been plying with much ſucceſs on the grand canal from Tullamore to this town, diſtance 59 miles Engliſh. Fare for oxen, 8s. each; cows, 7s.; veal calves, 3s.; ſheep, lambs, and ſwine, 1s. Britiſh money. This eſtabliſhment, when increaſed, and the canal more extended, will prove

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a very great advantage to the remote weſtern diſtricts, as enabling farmers, in ſuch ſituations, to forward fat ſtock to the metropolis; a meaſure they could not, from the length of journey, attempt before, and thereby oblige the landholders to diſpoſe of their ſtock in a ſtore ſtate.

I find by the perſons who come here from your ſide of the water, an opinion prevails, that this country is in an unſafe ſtate for ſtrangers to ſettle in. Ireland, in the year 1798, was in a moſt unfortunate and perilous condition; but happily, the ferment which then raged, is completely abated, and habits of increaſed induſtry and good order are now predominant. I think proper to appriſe you of this deſirable change, that you may take notice of it in your Magazine, to encourage ſuch perſons from your neighbourhood, who may be diſpoſed to ſettle here, where there is a wide field for the employment of intelligent men. I ſhall have great pleaſure to inform you on any ſubjects you require, ſo far as in my power.

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## *Liverpool Meteorology*, 1803.

### *April.*

Gentle ſhowers at the beginning. Lofty winds.—8th, Fair, ardent ſun.—17th, Rain, with high winds; Still ſhowery, with much hail.—27th, Froſt.—28th, Gloomy, with fogs; Rain, hail, or ſnow, more or leſs, 13 days; Wind approximating to the weſt.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Fall of rain, | 1 | 75 | Evaporation of water, &c. | 2 | 4 |

### *May.*

1ſt, High winds, with rain, hail, and ſnow.—7th, Great dews, ſo that the hygrometer at noon was 14 feet 3 inch. 65 dec. without any rain.—10th, Gloomy cold winds, rather ſtormy.—14th, Fair ardent ſun.—25th, Much rain; ſhowery to the end.

Rain, hail, or ſnow, more or leſs, for ſixteen days. Great approximation of wind to W.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Fall of rain, | 1 | 7 | Evaporation of water, | 2 | 7 |

### *June.*

Showery.—4th, Thunder ſtorm, with much rain in the time; fair and ſun.—10th, Much rain.—16th, Windy; fair ardent ſun, cold winds.—29th, Eight o'clock A. M. thick fog. Hygrometer 14 feet 2 inch. 8 dec. fair.

Rain, more or leſs, thirteen days. Greateſt approximation of wind W.

| | Inch. | Dec. | | Inch. | Dec. |
|---|---|---|---|---|---|
| Fall of rain, | 3 | 28 | Evaporation of water, | 2 | 56 |
| January to June incl. | 11 | 73 | Do. do. | 11 | 91 |

G. J.

## OBITUARY.

Died at Edinburgh, upon the 2d April, Sir *James Montgomery* of Stanhope, Baronet, late Lord Chief Baron of the Court of Exchequer, much regretted by his numerous friends.

Sir James Montgomery was born in the year 1721, being ſecond ſon of William Montgomery, Eſq. of Magbiehill, to whom the county of Tweeddale was indebted for the introduction of an early ſpecies of peas, and of the red oats, the moſt valuable variety that can be cultivated in an upland diſtrict. Sir James was the laſt ſurvivor of the county ſheriffs appointed by the Crown after the heritable juriſdictions were aboliſhed, and he was the firſt Scotſman preferred to the dignity of Lord Chief Baron of Exchequer in Scotland, that office having always, before his time, been held by Engliſhmen.

Before the middle of laſt century, the main diſtinction aimed at by country gentlemen, above the character of mere Nimrods, was that of claſſic learning; and the veneration, paid to ancient languages, was carried to ſuch a height, that the inveſtigation of the nature of words was in danger of occupying excluſively that of the nature of things. Fortunately, at the period alluded to, a ſpirit of enterpriſe in farming aroſe among the Gentry in Scotland; and England and the Continent were reſorted to for rural information, inſtead of the antiquated works of Cato, Virgil, Varo, and Columella. The Gentry, thus informed, took the lead in the verification of principles by experiment; and the tenantry, by various modes of moral excitement and encouragement, were induced to follow the example ſet to them. Sir James Montgomery was among the firſt to encourage this ſpirit of improvement in the various capacities of country gentleman, judge, and legiſlator. To him, in a great meaſure, Scotland is indebted for the act of Parliament, relaxing the reſtrictions of entails; that it was not more extenſively uſeful, proceeded from no fault of his, but from the formidable oppoſition that enſued.

Sir James, at an early period, introduced the culture of turnips into Tweeddale. We ſtate, upon the authority of Adam Kennedy, Eſq. of Romano, a ſurviving contemporary, and fellow-labourer in the introduction of improved farming, that he himſelf raiſed turnips in drills ſo early as 1757, and that Sir James had the ſtart of him by two or three years in this ſpecies of culture. This is confirmed by the information of William Graham, a confidential ſervant or grieve of the family, from which it appears that Sir James raiſed turnip upon his farm of Deanshouſes, pariſh of Newlands, both in broad-caſt and drills, ſo early as ſeaſon 1754, the latter dreſſed by a regular proceſs of horſe-hoeing. He alſo introduced the uſe of two-horſe ploughs without a driver, and for that purpoſe was probably the firſt in Tweeddale who improved the breed of horſes by the importation of ſtallions. It is a corroborative

fact,

fact, that for many years his male foals were kept and ſold as ſtallions for the improvement of the breed in other quarters of the country.

In the Agricultural Survey of Tweeddale, notice is taken of Sir James's attempts to cultivate moſs ſoils. Where the plough was uſed, and the moſs of a moderate depth, ſo as to allow the ſubſoil to be turned up and mixed with it, the iſſue was generally ſucceſsful, even to the effect of raiſing paſture of ſufficient luxuriance for rearing the largeſt fized ox ever bred in Tweeddale. Where the ſpade was uſed, as in deep flow-moſs, after much the ſame mode as adopted at Swineridge-muir, in Ayrſhire, the effects were by no means ſo ſucceſsful, probably owing to the difference of climate, or quality of the moſs.

Sir James's improvements upon the eſtate of Killern, in Stirlingſhire, were reported by Mr Wight, who ſurveyed that county in 1777, as furniſhing inſtances of the moſt perfect huſbandry. We would have extracted the whole paſſage alluded to, but the length of this article calls upon us to bring it to a concluſion.

In the dedication of the Agricultural Survey of Tweeddale, inſcribed to him by the author, his own pariſh miniſter, and evidently expreſſive of real heartfelt eſteem, Sir James is repreſented as a man of moſt amiable diſpoſitions; 'whoſe long continued attention to the management of the public concerns of Tweeddale; whoſe readineſs to aſſiſt, with ſalutary advice and counſel, every individual of her ſons; together with his conciliatory urbanity of manners, originating in humanity, not in artificial politeneſs, had ſince ſtamped him with the character, as they had gained him the appellation, of the Father of the County.'

On the 17th of June, died, at Haddington, Mr Robert Sommerville, ſurgeon there.—Mr Sommerville poſſeſſed a large ſtock of natural abilities, which he cultivated aſſiduouſly, and, on various occaſions, diſplayed conſiderable information concerning the rural and political economy of Great Britain. He aſſiſted in conducting the three firſt volumes of this Work; and was much employed by Sir John Sinclair Baronet, during the period he preſided at the Board of Agriculture. A number of his communications are to be found in the Tranſactions of that Board, and alſo in thoſe of the Highland Society; from whom he ſucceſſively received prize medals, and other marks of approbation.

Died lately, at Crawhill, Mr Thomas Lee, an eminent Eaſt-Lothian farmer.—Mr Lee came from Berwickſhire to Eaſt-Lothian, at Whitſunday 1771; at which time he entered to *Thornton Loch*, a farm belonging to Mr Niſbet of Dirleton. Being well acquainted with the turnip huſbandry, he and his two brothers, who had alſo taken farms from Mr Niſbet, were among the firſt who introduced the culture of that valuable root, on a large ſcale, into that county, over which it ſoon ſpread with great rapidity. Owing to the plentifulneſs of ſea-weed, it was then cuſtomary to keep the coaſt ſide lands conſtantly under grain crops; and when Mr Lee firſt left the fields unſown with grain, that were intended for turnip, his ſapient neighbours ſagely concluded that he was unable to purchaſe ſeed corn, and, of courſe, prognoſticated his immediate down-

fal,

ſal. A few years, however, convinced them that they had entertained an erroneous opinion, and did away the prejudices originally imbibed againſt Mr Lee, and the ſyſtem introduced by him. In 1793, Mr Lee removed to the farm of Crawhill, on the ſame eſtate, which he continued to cultivate in the like ſkilful manner as diſplayed in his firſt attempt. In a word, he was an excellent farmer, a good neighbour, much reſpected by his friends, and now deſervedly lamented by every one who had the pleaſure of his acquaintance.

## LITERARY INTELLIGENCE.

We are happy to learn, that 'An Eſſay on the whole Proceſs of Propagating Rape or Cole Seed, on various Soils, including the particulars of the modern mode of cultivating it with great ſucceſs, even on ſtrong Clays,' will ſoon be publiſhed by Mr Scott, Chatteris, Cambridgeſhire. This publication is ſtrongly recommended by Sir John Sinclair, Baronet, as of importance to Britiſh agriculture, being wrote by a gentleman who has enjoyed extenſive opportunities of acquiring a thorough practical knowledge of the ſubject inveſtigated.

## NOTICES TO CORRESPONDENTS.

*Epicurus's Reply* is under conſideration.

The *Strictures* of *Y. X.* upon the malt tax ſhall appear in our next.—This Gentleman will pleaſe attend, that the leading article of intelligence is always drawn up by the Conductor, and that he alone is reſponſible for the information therein given.

*Mr T. S.'s Anſwers* to the obſervations of '*A Friend to Improvements*;' and it is not our fault that they are delayed. Thinking, as we do, that he miſtakes the queſtion in various reſpects, a few remarks ſhall be added.

We are extremely ſorry that the paper *on the Cultivation of Moſt Land*, which, in our laſt, was promiſed a place, has been accidentally neglected. We ſhall compenſate that deficiency in our next Number.

The ſecond Letter *on Thraſhing Machines*, the Review of Mr Amos's *Treatiſe on the Drill Huſbandry*, and a variety of other articles are unavoidably poſtponed. The quantity of materials now in hand renders it impracticable for us to inſert the favours of our correſpondents regularly; but impartial attention ſhall be beſtowed upon them in courſe.

The Surveys of the Counties of *Wicklow*, *Dublin*, *Down*, and *Cavan*, with ſeveral other agricultural publications, are in the hands of our Reviewers.

Various articles of intelligence were too late of coming to hand.

No. XVI. will be publiſhed on Monday the 7th November.

*ERRATA.*—In page 297, 18 lines from bottom, inſtead of *annually*, read *which annually*; and in the ſucceeding line, for *confine*, read *confirm*.

THE

# FARMER'S MAGAZINE:

MONDAY, 7. NOVEMBER 1803.

(N° XVI.)

## BRANCH I.

### ORIGINAL COMMUNICATIONS.

TO THE CONDUCTORS OF THE FARMER'S MAGAZINE.

*Account of the Eddleſtone Farming Club.*

SIR,

THE extenſive circulation of your Magazine, has excited a general ſpirit of inquiry among farmers, as the exiſting ſpirit of inquiry has tended to the more extenſive circulation of your Magazine. Farmers are forming themſelves into clubs, for the purpoſe of diſcuſſing farming topics, inſtead of that of hard-drinking.

I cannot but approve of ſuch inſtitutions, as both a rational and improving mode of ſocial intercourſe; but, as example ſtimulates to imitation, more powerfully than precept to obſervance, I ſhall lay before your readers, a ſhort account of the inſtitutions, and the proceedings of a Club of practical farmers, which commenced laſt winter in the pariſh of Eddleſtone and county of Tweeddale, that thoſe who are pleaſed with the precedent may go and do likewiſe.

The club is limited to ſuch numbers as can conveniently meet alternately, once a month, at each other's houſes; where the landlord gives a plain dinner of beef and greens, with whiſky punch, for the encouragement of the growth of barley.

To prevent all chances of diſcord, the topics of religion and politics are excluded, and diſcuſſion is confined to farming;—for the ſame purpoſe, one black ball, at the ballot, excludes any new member propoſed for admiſſion.

To prevent confuſion, one only muſt ſpeak at a time, addreſſing himſelf to the preſes; who has power to impoſe ſmall fines for

rudeneſs, indecency, &c.; his authority being ſanctioned by the penalty of excluſion in caſe of diſobedience.

A ſmall annual payment, together with fines for abſence, &c. go to purchaſe books for a common library. The firſt book purchaſed was your Magazine.

The other rules are juſt ſuch as common ſenſe readily dictates for all ſuch inſtitutions; I ſhall not therefore dwell upon a minute ſpecification, but merely notice one which may perhaps be conſidered as not inexpedient.—In caſe of diſagreement between two members, either on account of ſuppoſed perſonal inſult, or from miſunderſtanding of the terms of a bargain, in the courſe of daily tranſactions; ſaid members are bound to ſettle their difference, by the arbitration of any three club members they ſhall agree upon; and ſhall not go to law, under penalty of excluſion from the Club.

At each meeting, a farming topic is given out as the ſubject o diſcuſſion at the enſuing one; and (as is neceſſary in all meetings of the kind) it is found expedient that ſome member in particular ſhould come peculiarly prepared, either with a written eſſay, or to ſpeak at large to the queſtion. One plain country farmer has delivered in four eſſays on different ſubjects, written with good ſenſe, and intelligibly expreſſed, which I have ſeen. A very ſhort account of theſe will convey to other practical farmers a general notion of what their Eddleſtone brethren are about.

The firſt is upon the queſtion of the preference of a four-ſhift or five-ſhift rotation after dunging (the ſhifts, there, moſt commonly in practice on the land in conſtant culture) for the light turnip ſoil of Eddleſtone water.

The farmer obſerves, in general, that, upon the four-ſhift rotation, all the crops may be expected to be better; both, becauſe the land is kept more thoroughly clean, from the quicker recurrence of the fallow; and alſo, becauſe none of them are ſo far from the dunging as the laſt one of the five-ſhift courſe muſt be; beſides that more dung may be made from the greater proportion of turnip crop.

The five-ſhift courſe muſt either admit of *peas* after the oat crop; or of *a ſecond year of hay crop*; or of *a year's paſture* after the hay crop.—Peas are objected to, being a precarious crop, and generally allowing the ground to become poiſoned with graſs roots, or other weeds: If, indeed, they were drilled and horſe-hoed, with a little dung, the rotation might be more properly extended to ſix ſhifts; that is, by taking a crop of oats after the peas: But as peas muſt be ſown ſo much earlier than turnip, as not to allow of the ſame preparatory ſpring fallowing before ſowing, and, at any rate, in growing, ſoon interrupt the progreſs of

of the plough, a drilled peas fallow is nothing comparable to a turnip one;—beans, though eaſier horſe-hoed, are inadmiſſible in our late climate. In regard to a ſecond year of cut hay, experience has uniformly ſhown, that it never produces half a crop; and, from want of thorough cover, the land is ſuffered to run to weeds. As to one year's paſture after hay; if the land has been ſo properly ſown as to yield good hay, it cannot have ſufficiency of cloſe ſward to make good paſture; or, if ſown thick enough for good paſture the ſecond year, the plants would ſtarve one another, and produce no weight of hay crop. Indeed, where ſeveral years paſture is admitted into an extenſive rotation, by which a farmer, whoſe ſituation ſuits it, intends to go over all his farm with improvement; it is recommended that the land ſhould be ſown, entirely with a view to paſture; and ſhould be paſtured from the firſt, without being cut at all.

From ſuch preliminary obſervations (which the following table will make more plain), a calculation is inſtituted of the relative produce of a rotation of four and that of five ſhifts.

*Four Shifts.*

| | Produce per Acre. |
|---|---|
| 1ſt, Turnip, at 3l. 10s. per acre, deducting 2s. for ſeed, - - - | L. 3 8 0 |
| 2d, Barley, 8 bolls per acre, at 18s. per boll, deducting half a boll for ſeed at 9s. - | 6 15 0 |
| 3d, Hay, at 200 ſtone per acre, at 7½d. per ſtone, deducting 17s. for ſeed - | 5 8 0 |
| 4th, Oats, 7 bolls per acre, at 15s. deducting one boll for ſeed - - - | 4 10 0 |
| | L. 20 1 0 |

The average produce of an acre, under this rotation, is therefore 20l. 1s. divided among four, or 5l. 3d.

*Five Shifts.*

To effect this extent of rotation, a ſecond cutting of hay, or a year's paſture, muſt be brought in after No. 3d in the foregoing rotation, or elſe a crop of peas after No. 4th. Neither of them would be profitable; and, indeed, none of the above numbers would be ſo good as under the rotation of four ſhifts. But to afford all fair play to the five-ſhift rotation, we ſhall allow that all its crops ſimilar to that of four ſhifts ſhall be equally good; and we ſhall take the ſecond year's hay crop, or the year's paſture after hay, or the peas after oats, all of them at the value of



Carry over - L. 20 1 0

| | | | |
|---|---|---|---|
| Brought over - | L. 20 | 1 | 0 |
| a decent crop of peas; which we ſhall rate at a produce of 4 bolls per acre (though Lord Kaimes only rates peas at 2, or 2½); thence 4 bolls at 16s. deducting 1 boll for ſeed - - - | 2 | 8 | 0 |
| | L. 22 | 9 | 0 |

This, added to the return per acre of the ſimilar crops, at the ſame rate as in the four-ſhift rotation, gives 22l. 9s.; which, divided among five acres, averages 4l. 9s. 9¾d. per acre.

By this calculation, upon a farm of 100 acres, the yearly difference of produce from a four-ſhift rotation, would exceed that from one of five ſhifts by 52l. 1s. 8d.

In a ſecond eſſay upon the proper mode of preparing land for turnip, I find a particular mode of ribbing recommended by good reaſons. The ſtubble of the preceding crop is to be firſt clean ploughed and harrowed; the ribbing is then directed to run aſlant the former direction of ploughing, where wetneſs does not prevent, at about an angle of 20 degrees; the ribbing is begun at the middle, and extended out to each hand; the near horſe going always in the hollow furrow, and the right hand one on the firm land; ſo that the earth raiſed never falls into a hollow furrow previouſly formed. If the land is perfectly clean, juſt ſplit theſe ribs over dung laid in the hollows, and ſow turnip on the new ridge.

In a third eſſay, upon lifting and laying down various ſpecies of outfield, the only thing I ſhall ſtate, is a mode of renovating outfield, which had been previouſly limed and exhauſted by cropping—a ſituation frequently to be met with. Firſt, a complete ſummer fallow: The land then to be laid up in ridges, like thoſe formed for drilled turnip, through winter: Next ſummer, reverſe theſe ridges repeatedly, merely by cleaving them: To lye all next winter in this form of ridges: Next ſpring, to dung the hollows with compoſt, which hath in the interim been prepared; this to be covered by cleaving the ridges; and on the new ridges, formed by this operation, ſow turnip, to be conſumed upon the field. The *rationale* of the practice is, to obtain every poſſible atmoſpherical advantage, by the long expoſure of as much ſurface as poſſible.

In a fourth eſſay, upon the rearing of black cattle, after various rules as to choice of breeders, ſome obſervations occur in regard to the poſſibility and economy of rearing calves on very little milk, by the ſubſtitution of hay or lintſeed teas. As it was ſtated, that Sir George Montgomery, had raiſed 20 calves laſt ſeaſon, with almoſt no more milk than was ſufficient to initiate them to the practice of drinking hay or lintſeed teas, which calves were then (beginning of Auguſt) all alive and thriving; ſome

ſome of the members, who rear each 5 or 6 calves a piece yearly, reſolved, that each ſhould riſk a calf, in verifying the experiment, againſt next ſeaſon, and report to the Club.

If you think the publication of this may be of uſe, publiſh it; if not, I need not direct one of your extenſive intelligence, to the proper uſe of waſte paper. Yours, &c. C. F.

NOTE BY THE CONDUCTOR.

We obſerve the proceedings of our Eddleſtone Brethren with much ſatisfaction, and would rejoice were ſimilar inſtitutions formed in every diſtrict, or extenſive pariſh, in Scotland. The rules adopted by the Club, ſeem well calculated for general imitation; and it is only from a ſteady adherence to them, that regularity can be maintained, or the inſtitution itſelf ſecured from a ſpeedy diſſolution.

The arguments in favour of a four-courſe ſhift are judiciouſly ſtated. In fact, they are ſanctioned by the practice of our beſt agriculturiſts. A five, or a ſeven-courſe ſhift, forms no part of our creed, as they conſtantly lead to graſs cropping.

It will give give us pleaſure to hear frequently from the Club, and particularly concerning the trials intended to be made, of hay or lintſeed teas, inſtead of milk, in the rearing of calves. If ſuch ſubſtitutes are found to anſwer, the expence of rearing calves muſt be much reduced, and the articles of milk and butter become more plentiful in our markets. N.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Manufacture of Dunlop Cheeſe.*

SIR,

HAVING ſeen ſeveral Numbers of your Magazine, and remarked, that none of your Correſpondents have treated on the Management of the Dairy, although a ſubject truly connected with rural affairs; I am therefore, induced to ſend you the following obſervations. In this part of the weſt country, in the immediate vicinity of Dunlop pariſh,* where the very name, at a diſtance, gives an agreeable flavour to the cheeſe dairy, huſbandry is well underſtood. I have therefore taken the liberty of giving you a few thoughts on the proceſs of making that article, which poſſibly will afford ſome entertainment to your numerous readers.

When a farmer is poſſeſt of a dozen of milch cows, or upwards, it is generally allowed that the beſt cheeſes are made, when this is done every day, that is, the one half of the milk im-



* County of Ayr.

mediately from the cows, and the other not above twelve hours old; then the milk will not readily have contracted any taint from the dishes in which it is kept, nor from the weather, which it is apt to do in summer; and the newer the milk is, it will consequently require the less thickening to curdle it. Very little depends on the size of the cheese; it may be equally good from 20 to 60 pounds. The common mode of making them here, is this. After the milk is brought to a certain degree of heat, (no doubt, the nearer that of new milk the better), it is all put into a large vessel, made on purpose, where it receives the thickening, and is covered close up for a short time, perhaps ten or twelve minutes, when, if the thickening is good, it will be curdled; then it is gently stirred about, when the whey begins immediately to separate, which is always taken off as it gathers, until the curd begins to turn pretty solid; afterwards, it is generally put into a drainer, a dish also made on purpose, with small holes in the bottom, on the cover of which any convenient weight is applied. When it has stood some time this way, and pretty dry, it is returned again into the first dish, where it is cut into very small pieces, by means of a knife, which has three or four blades, fixed on prongs from the handle, which cut in a horizontal position; and then it is salted, and properly mixed by the hand. Lastly, it is put into a *cheesfitt*, which is a stout made dish with iron hoops, and a cloth is put between this dish and the curd, which has a cover that goes exactly into it. In this state it is put into the press, which is a large square stone, commonly from 12 to 20 cwt. fixed in a wooden frame, with an iron screw in the middle for raising and lowering it; every now and then it is taken out, and dry cloths put round it, until it parts with the whey completely. When this is suspected to be the case, it is laid aside for a day or two, when, if there is the least appearance of whey, it must again be put into the press for a few hours, and the cloth will always indicate if any whey remains. As soon as it is ascertained that there is none, the cheese is laid past, upon boards made on purpose, which should always be as broad as the cheese. Sometimes it is laid upon a deal floor; but wherever they are laid, care should be taken to turn them frequently, and to clean the boards or floor they lye on, and to notice if they keep from running any whey, as no cheese will keep well that has the least whey remaining; and when that part sours, a disagreeable taste is generally communicated to the whole cheese. Indeed the material article in making cheese is, to be attentive to have the thickening (or rennet, as it is called in some places), particularly sound and good, as the smaller the quantity that is used, the better for the cheese; and it is impossible to have a good cheese, where an immoderate quantity is used; for, besides

giving

giving the cheeſe a very bad taſte and ſmell, it acts generally as yeaſt upon it in the curing, and blows up the cheeſe full of ſmall holes: this will alſo happen, though in a leſs degree, by allowing the cheeſe to lye too long on one ſide. There are a number of modes, after the cheeſes are cured, of poliſhing them for market; but theſe are rather a hurt, than any advantage; all that is neceſſary, beſides turning, is to give them a rubbing, now and then, with a hard coarſe cloth, particularly after harveſt, when they will tend to breed mites. So fond are ſome of the colour of cheeſes on the outſide, that I have ſeen numbers of Engliſh cheeſes, ſet off for market, by painting them with Spaniſh brown and lintſeed oil. There are a number of pariſhes round Dunlop, that make cheeſes equally good, and in far greater quantity; and indeed, from a good part of Ayrſhire, when once the cheeſes are carried to a diſtance, they are known by the name of Dunlop cheeſes. In this part of the country, however, there is not much butter made, and conſequently, the people are not ſo well acquainted with the manufacturing of that article. If any of your Correſpondents, would give their information, concerning the beſt mode of managing and curing of butter, both from milk and cream, it would be eſteemed obliging, by ſome of your readers. If theſe few hints are agreeable, you may hear from me afterwards. And in the mean time, wiſhing every ſucceſs to your uſeful Work, I am, Sir, yours,

AMICUS.

*Dalry*, 3. *June* 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Cultivation of Moſſes.*

SIR,

IN the February Number of your Magazine, I obſerve a query concerning the culture of moſſes, by a gentleman, who ſubſcribes himſelf *Novice Junior*. The improvement of Moſs, without the aid of lime, is a ſubject which has, of late, occupied a conſiderable part of my attention. I would not, however, have taken it upon me to anſwer the query of Novice Junior, had it not occurred, that others, of greater obſervation and experience, might, from the ſame feelings, be induced to withhold their more valuable information.

In this part of the country, conſiderable tracts of peat moſs, have lately been brought into cultivation. The general method of improvement has been by liming, which, with the forming into ridges, is often attended with an expence of eight or ten pounds an acre. Burning of the moſs, has been ſucceſsfully tried by ſeveral perſons, although it is much decried by the favourers of

the *Swindridgemuir Syſtem.* As this is the only method I know, of bringing any extent of moſs into cultivation, *without the benefit of lime*, I ſhall attempt to give your Correſpondent ſuch directions for practiſing that mode of culture, as I have learned from obſervation, and from the experience of others.

When the moſs is very dry in ſummer, let ſmall fires be kindled in thoſe places which are a little elevated; or where, from the ſurface being broken, the turf has begun to rot. Small patches may by theſe means be burnt, at ſuch convenient diſtances, that the aſhes may, for the moſt part, be thrown or ſpread over the whole ſurface, with a ſpade or ſhovel. After the field has been thus burnt, it may be formed into ridges, and the aſhes ſpread as the labour advances.

If the ſurface of the moſs be ſmooth and unbroken, it may not be eaſily burnt in the manner above recommended. It muſt, therefore, be previouſly formed into ridges with the plough or ſpade, leaving a ſtripe of ſix or eight inches breadth in every fur unturned. Theſe ſtripes muſt afterwards be cut into very thin ſlices, and thrown on the ridges to dry. A proper opportunity muſt then be taken, for kindling them in different places of the field, when the fire will ſpread over the whole ſurface, and leave it covered with a fine cruſt of aſhes. It will readily occur, that the beſt time for burning muſt be, before the drought has penetrated to any conſiderable depth; for if the ſurface be covered with aſhes to the thickneſs of an inch, or two inches, it is abundantly ſufficient. When the moſs has been laboured during the winter months, it is generally burnt the following ſpring. I have been informed by one perſon, that (when there was an appearance of rain,) he has often ſet fire to his moſs in the morning, and ſown the ſeed before night. In thoſe places where the fire was not extinguiſhed, before ſowing, he would have beat the ſurface with a ſpade, or ſmothered it by throwing on a little moſs. The aſhes would have been ſo warm, that the ſeed would literally have jumped; yet the vegetation was ſo quick, that although his neighbours had been two weeks earlier in ſowing upon their clay lands, his crop would have been ſooneſt cut.

It may be here obſerved, that beſides burning after the manner I have explained, ſome people give a light dreſſing, of perhaps 40 or 50 bolls of ſlacked lime, or at the rate of five or ſix tons of ſtones, per acre. I am aſſured that the lime will do no manner of good to the two firſt crops, as theſe, with the aſhes alone, are generally rather too ſtrong as otherwiſe; but if the cropping is to be longer continued, a ſmall quantity of lime will be of ſervice. Novice Junior may, however, agree with me in opinion, that inſtead of following our plan, of taking three or more ſucceſſive crops of oats from newly improved peat-moſs, it would

would be advantageous to lay it down earlier with graſs ſeeds; for it will be obſerved, that theſe freſh ſoils are peculiarly favourable to the raiſing of hay crops. The hay ſeed generally ſown on theſe ſoils, is called ſoft graſs. It admits of being cut for ſeveral years; and the ſecond year's crop is always better than the firſt.

When a ſufficient quantity of dung can be procured, ſome reckon it good management, to plant the moſs the firſt year with potatoes, in the form of lazy beds. Two of theſe beds may afterwards be thrown together; and when ſown next ſeaſon with oats, a good crop always follows. It is, however, allowed, that the benefit of this manure is ſooner loſt than that of lime or aſhes.

It now remains, to ſpeak of the expence attending the cultivation of peat-moſs by burning. The ridges are moſt commonly formed with the ſpade, and by a mode of digging, called *couping*; which is, by cutting the turf into oblong pieces, and turning them about half over, or on their edges, ſo as to reſemble ploughing. When the moſs is ſmooth, and eaſily turned, it may be digged in this manner, for from forty to fifty ſhillings per acre. Others approve of the common method of digging, which they call turn-ſpading, or turn-ſpaded, but it is more expenſive. The burning may be done for from ten to fifteen ſhillings per acre. And the only other piece of labour ſeems to be, the covering of the ſeed, which may be done with a thorn buſh, or with hand hoes, or with a light harrow, as the turf is more or leſs tender.

The expence therefore per acre will be nearly as follows:

| | | | |
|---|---|---|---|
| Digging - - - - | L. | 2 | 5 0 |
| Burning and ſpreading the aſhes - - | | 0 | 10 0 |
| Covering the ſeed, four perſons being ſufficient to the hoeing of one acre in a day - - | | 0 | 10 0 |
| Expence of labour - - | L. | 3 | 5 0 |

If the ridges are formed with the plough, it is preſumed that at leaſt twenty ſhillings may be deducted from the article of digging.

If you ſhall conſider this paper to be deſerving of the attention of Novice Junior, I will thank you for inſerting it in your Magazine. The name of the writer can add nothing to its value. Novice Junior may, however, reſt aſſured, that it contains nothing upon the ſubject of burning, but what has been practiſed by others, and what I myſelf intend immediately to adopt, in the improvement of a conſiderable tract of peat-moſs, in a high, unfavourable ſituation. Only, I will attempt to raiſe turnips, on a part, as a firſt crop; and I will lay down a piece of the very coarſeſt with graſs ſeeds, without taking a crop of grain. I will

alſo

also try some experiments; which, if successful, shall be communicated to Novice Junior, through the channel of your Magazine. I am, Sir, your very humble servant,

*Ayrshire, 28. March*, 1803. D.

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FOR THE FARMER'S MAGAZINE.

*On improving Peat-Bogs, by Paring and Burning. Extracted, by permission, from Mr Steele's Manuscript History of Peat-moss.*

After a peat-moss hath been effectually drained, although it will, of its own accord, in time, produce plenty of grass for cattle; yet it is expedient, in order to obtain quickly the best crops, to level, pare, and burn its surface.

Some mosses have been pitted for fuel; and the generality of those that are in a state of nature, have a very unequal surface, rising into hillocks of a soft and fungous texture. The pits should be filled up with a portion of what is pared off the hillocks; and the remainder of the substance of these hillocks, and, in general, all the loose, soft surface of the bog, should be burnt. Some inches deep, also, of the former peat surface, should be pared off and burnt.

In the Agricultural Report for Suffolk, the following just remark is made on this subject: 'It is scarcely possible to bring boggy, moory, peat soils, from a state of nature into cultivation, without the assistance of fire; which never fails, but because the men employed do not pare deep enough.'

Thomas Kinnear Esq. of Kinloch, in the county of Fife, began to improve a very deep peat-moss on his estate, about fourteen years ago. It was then covered with heath, and did not yield the value of sixpence per acre. He has now let part of it for upwards of 2l. per acre.

After draining this moss, Mr Kinnear cut off, with a common spade, all the heights and rising tufts of the soil, and also a great deal of the coarse peat, full of recent fibrous roots; and what remained of the turfs, after filling up holes, and levelling inequalities, were collected together, and piled up in heaps to dry, and thereafter burnt, and the ashes spread on the surface, so as to cover it nearly half an inch in thickness.

The ashes, as soon as produced, were spread and mixed with the peat soil, to prevent their becoming the sport of the winds, or being exhausted in detached spots by rains.

From the effectual drainage which this peat-bog received, it sunk and consolidated, so as to be able to bear a plough and horses in the course of the second year after it was drained. This gentleman attributes a great deal to the ashes thus obtained from

from the soil itself, for procuring him excellent crops of grass and corn, ever since his moss was in culture.

The expence of levelling, and paring and burning, must depend on the situation of the surface of a peat-bog. I find it estimated at different prices, accordingly, from fifteen to fifty shillings per acre.

Sometimes the nature of the surface admits the work to be done with a common plough, and sometimes with a paring plough and horses; and sometimes, in particular circumstances, it is performed with the breast plough, or paring spade. This last mode is thus accurately described in the Agricultural Report of the North Riding of Yorkshire, by Mr Tuke junior: 'It is performed with a paring spade, which a man thrusts forward with his loins, and which cuts the sods about one foot in breadth, and three feet in length. If the weather is so unsettled after paring, that the sods do not dry when lying on the ground, women and children are employed to set them on edge, to expedite their drying; after which, they are put into heaps, about the size of a bushel, and burnt.'

This simple and cheap mode of converting peat-moss soils into arable and pasture lands, by paring and burning, hath been tried, in various parts of Scotland, with uniform success. I think, of all the methods practised, it is the cheapest and best, and, as such, most approved by those enlightened on the subject.

Mr Rutherford, in his Letter to Sir John Sinclair, in the Appendix to the Survey of the Northern Counties, says—'The greatest improvement, after draining boggy land, is, burning the surface; which operates a total alteration on the soil.'

In the Agricultural Report of Clydesdale, Mr Naismith recommends draining mosses, and then paring and burning their surface, and top-dressing it with sand, gravel, or clay, which, he says, has been followed with success in the Middle Ward of Clydesdale; which county alone has forty-two thousand acres of moss ground.

It would be tedious, here, to go over every account of the success of this method of reclaiming peat-mosses, found in the late agricultural surveys of Great Britain and Ireland, and statistical accounts of Scotland. But all those accounts that I have found written with precision and accuracy, are put in the Appendix, together with such others as I have derived notice of from personal information; for experience is every thing in agriculture.

Permit me, however, further to remark, that, both in England and Ireland, the same ideas as those here stated are entertained respecting the improvement of mosses, by the best informed

formed cultivators. In the ſtatiſtical Survey of Kilkenny, in 1802, by William Tighe Eſquire, there is a valuable communication of the experience of Mr St George on this ſubject, in which he adviſes farmers ſimply to drain their peat bogs, aſſuring them they will ſoon after ſerve for paſture; and to have patience, after draining, till they are conſolidated, before they attempt any further improvement; ever recollecting to keep a free paſſage for the water to go off. Thereafter he adds, bogs may be ploughed and burnt, and ſown with graſs ſeeds, by which good meadow graſs will be produced for fattening ſheep. After which, as a further improvement, they may be gravelled on the ſurface.

The Agricultural Report of Pembrokeſhire by Mr Haſſal, contains likewiſe the following notice. Mr Campbell of Stackpole-court has made ſuch an improvement on the bog of Caſtle-martin-Corſe, of ſeveral hundred acres, as muſt convince every obſerver what ground of this ſort is capable of. It is now drained, enclofed, and divided by ditches, moſt of which are planted with thriving willows. It has been improved by paring and burning. No agricultural improvement, Mr Haſſal adds, that he has been a witneſs to in the courſe of an extenſive and long experience, has ſucceeded better than this undertaking, the ſubject of which promiſes, in a few years, to become ſome of the moſt valuable land in the county.

The Communications to the Board of Agriculture, publiſhed in 1802, contain alſo ſome obſervations on paring and burning peat ſoil, by men of great knowledge in agriculture. Mr Cloſe, in his Eſſay, mentions an improvement on a peat ſoil by Sir Henry Peyton, where great crops were produced by paring and burning. He adds, no ſoils can pay better for paring and burning than theſe, as the operation of paring coſts very little, and it is a very efficacious dreſſing on the ſpot; and, the ſame ſoil continuing for ſome yards below the ſurface, it is an inexhauſtible fund of vegetable food.

In another Eſſay to that Board, the Reverend Arthur Young obſerves, that paring and burning, with a proper courſe of crops, is ſafe on any ſoil, and eſſentially neceſſary to ſome. Peat is the richeſt ſoil in the world, and therefore burning the moſt univerſally practiſed on it. 'Whatever variety of ſentiments there may be on this method (ſays he) for other ſoils, here there can be none. The univerſal practice, from the flat fens of Cambridgeſhire to the ſwelling bogs of Ireland, on the mountainous moors of the north of England, and on the rough ſedgy bottoms in almoſt every part of the kingdom, when freſh lands are broken up by men of real practice and obſervation, is,

is, to begin by paring and burning. Regiſtered experiments of doing it by fallowing, are to be met with in various works. The Board's Report of the North Riding of Yorkſhire and of Somerſetſhire, details ſome; others are to be found in Mr Young's tours; and the reſult is, either loſs, or a profit ſo very inferior, that the queſtion ought to be conſidered as done with. Let it ſleep for ever, except for the wrongheaded individuals, who will, upon every queſtion, ariſe, in every age, to contradict the common ſenſe of mankind.'

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FOR THE FARMER'S MAGAZINE.

*Original Letter from the late Sir James Stewart, Baronet, Author of a Treatiſe on Political Economy, to a Gentleman in Stirlingſhire, dated 14th October 1777. Communicated by Mr Erſkine of Mar.*

I have the honour of your letter of the 11th, concerning the Corn Bill, but ſhall not enter upon the ſubject in this letter. I ſee you are well grounded in the ruling principle concerning importations. Corn is a manufacture, and greater than all other manufactures put together, both with reſpect to the number of the conſumers, and the number of the manufacturers. The inquiry you propoſe, for twenty-one years back, cannot be accompliſhed with exactneſs. The fiars will prove nothing, becauſe we have had no ſcarcity; and high prices are advantageous (ſay I) to cheap manufacturing. Cuſtomhouſe books in Scotland, will give no light, as Parliament found it, in forming a table, which I have, concerning the quantities exported and imported for ſome years preceding 1772. But the merits of the queſtion, concerning the effect of the prices of grain upon the proſperity of manufacture, muſt be examined, not from exportation, but from the rate of wages of manufacturers, compared with the fiars of the year. If the Glaſgow merchants can ſhew, from uncontroverted evidence, that wages keep pace with the prices of oat meal, riſing, and falling, as oat meal riſes, and falls, I give up my oppoſition to their plan: If they can ſhew that the wages of the great manufacturing claſſes, of weavers, ſpinners, &c. have come down theſe two laſt years in their own city and neighbourhood, in the ſame proportion, or nearly to it, as the price of oat meal has come down in this period, compared with the preceding years: If they can do this, I think their arguments are good; and if Parliament put the iſſue of the queſtion upon this fact, I am pretty ſure the merchants will not prevail; becauſe nothing but a riſe in the price of ſubſiſtence,

sistence, supposing it to be moderate, ever engaged both farmers and manufacturers to become industrious. As long as merchants have profits on the sale of manufactures, the manufacturer will share their profits with them, were they to live upon the air; and it is in proportion to the high or low profits of the merchants, and not in proportion to the high or low price of the manufacturer's subsistence, that the wages of industrious labour rise, or fall.

These have long been, and still are, my notions upon this subject. But I am sick of repeating them; I am old and inactive; I have had conversations with the Glasgow theorists; I have even written to them on this same subject, to no purpose. They hate the lairds of Clydesdale, and do all they can to discourage the supply which their lands send them. There is no example of a Glasgow merchant ever purchasing one boll of meal in any market of the county. The reason is plain, they can make no monopoly of it, because every farmer supplies the market in competition with them. They prefer to see their markets supplied from Ireland, or from distant countries, in the way of trade, to the other supply, from which they (the merchants) draw little profit. It is a certain fact, that the greatest quantities of Irish meal, lately imported, has been consumed by our tenants, who carry down their good meal for the consumption of the manufacturers, who will eat nothing else, and bring back the bad Irish meal, for their own use. My assistance at the committee, will be of little use, as I know my opinions will have little weight; they have long been printed, little read, and less considered. We have a committee as you have, of which I am one. I hear you have written upon the subject; so Mr Lockhart, Cambusnethan, told me; but Smith has printed in favour of free importation. Let the merchants adopt his ideas, as you observe, and the landed interest may follow: but I think, if such a scheme would ruin the manufacturer, it must equally ruin agriculture.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Thoughts on Flax Husbandry.*

SIR,

HAVING been a constant reader of your Publication, from its commencement, and highly gratified with the extensive stock of sterling information therein contained, permit me to offer a hint, such

such as occurs to me, on the subject of extending the growth of flax.

There is not a doubt, that as luxuriant and productive crops of flax may be raised in many parts of Scotland, as perhaps in any other country; and though the encouragement held out by the Honourable Board of Trustees may be tempting to many, yet adverse circumstances, of different kinds, deter the generality of farmers, and chiefly the greatest and most intelligent ones, from embarking in the trade; such as, that notwithstanding it is deemed the most robbing crop that grows, there is no return from it to the dunghill; the operations of weeding, pulling, watering, grafing, &c. interferes so much with hay and corn harvest, turnip work, preparing land for wheat, &c.; besides the unskilfulness of most farmers in the process of watering or steeping, is enough to deter them from it; not to mention the total want of proper watering places in many situations, with the general abuses at lint mills, where a farmer cannot give attendance, and where the workmen are not only unskilful, but shamefully careless, often allowing half of the lint to be knocked away with the skutchers, and cleaning the remainder very improperly. As a remedy for these abuses and inconveniences, allow me to suggest, that if the trade was in the hands of a set of opulent and skilful men, who have made it their study to understand every part of the management of lint in all its stages, and who would purchase it from the farmers when ready for pulling, so as they may have no further trouble, unless perhaps assisting with the carriage of it to the watering place, to the spreading field, and to the mill: In this way, the trade might flourish, as such people would be able to afford the farmer a price that would make it worth his while to raise flax, and have a handsome profit to themselves. We may naturally suppose, that these lint boors, as they are called in Holland, when properly established, will provide themselves with every requisite for carrying on their business; such as, lint-mills (perhaps on an improved plan) in their own possession, with proper hands for working them, under their own eye; also proper watering-places, upon a large scale, detached from running waters or lakes, where the steeping of lint is a nuisance, and does mischief, by poisoning the fish, cattle, or horses, and hurting the health of the people, who are obliged, in many places, to use these running waters, for want of springs, though at some miles below where it is steeped. A lint boor, who carries on an extensive trade, can much better afford to have all these conveniences in a proper style, than a farmer can, to whom it is but a secondary object; while, on the other hand, as it would be the sole trade of the farmer, he can see justice done,

done, in every respect, to the article, in all its stages, from the growing field to the heckle; and by his constant attention, and superior knowledge in the proper mode of managing it; by skilful and attentive management, and completely checking all depredation, it may be presumed, that the crop will be at least one third more productive, and perhaps of a better quality, than commonly happens.

Was a flax husbandry established upon these principles, I have no doubt but that, in a few years, as much of the article might be raised in Scotland as would supply the whole of our linen manufacture, and, of course, an immense sum retained at home, that is now annually sent abroad for purchasing what the trade requires. To farmers, it would become a profitable concern, seeing that a good rent could be paid, while the trouble would be confined merely to ploughing and harrowing the ground, as is done for a corn crop. Their attention would not be taken from the ordinary line of business, or engrossed by the multifarious processes necessary before flax can be brought to perfection. It is by this division of labour, that the trade can be made to flourish; and I would as soon expect that a farmer would thrive, who grinded his wheat into flour, and baked that flour into bread, as that the grower of flax could succeed, when he attempts to execute all the after operations.

If the above is deemed worthy of a place, and can have any tendency to promote a more general growth of flax, I will consider myself amply rewarded for suggesting it.

I earnestly wish every success to your Magazine, or, which is the same thing, to the improvement of the country. I remain, &c. J. M

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Observations on the Disease of Sheep, for which Inoculation has been practised on the Continent, &c.*

Sir,

In the review of Lawrence on Horses, No. XV. p. 331., your printer has fallen into a whimsical blunder, having substituted *saccharine* for socotrine aloes; and thereby converted the bitterest article of the Materia Medica into the sweetest.

Your correspondent R. K., No. XV. p. 297., appears to have mistaken the disease for which inoculation of sheep has been practised on the Continent. About ten years ago, at the desire of Sir John Sinclair, I translated from the French, a treatise on the Management of Sheep in the South of France, and the diseases to

to which they are ſubject. I think it was a paper in the Tranſactions of the Agricultural Society of Paris. I clearly remember two eruptive diſorders of ſheep mentioned in that treatiſe: *La gallie*, literally the itch, our ſcab; and *La verole*, which may be tranſlated the ſheep-pox, and which is the diſeaſe for which inoculation has been ſucceſsfully employed.

This laſt diſeaſe, like the ſmall-pox among mankind, is deſcribed as epidemic, or contagious; in particular ſeaſons exceſſively infectious; and very mortal, when acquired in the natural way by contagion: while, on the other hand, it is very mild, when produced by inoculation. It reſembles the ſmallpox in its boils or puſtules, in the regularity of its progreſs, and in the circumſtance of never attacking the ſame individual twice. A female agriculturiſt, or ſtore-miſtreſs, is mentioned as having firſt introduced the practice of inoculation.

The above is the beſt account I can give of this ſubject, from a ten years recollection at leaſt. As the treatiſe is not long, and contains many curious particulars reſpecting the management of ſheep in the Pyrenean mountains, I dare ſay the worthy Baronet will readily communicate it to you for the Magazine, if it has not fallen aſide.

I by no means think myſelf competent to enter the liſts with your Noble correſpondent in laſt number, on the ſubject of working oxen. But I cannot conceive how the numerous and highly experienced farmers *on both ſides of Tweed*, ſhould have univerſally given up the uſe of oxen for draught, which they all formerly employed, unleſs from thorough and practical conviction, that *horſes are more profitable* for farm labour.

I laſt year drained about two acres of a field, in the Eſſex way, which was wet from a retentive bottom; and the operation has been perfectly ſucceſsful. The drains run lengthways, every fifteen feet, communicating at each end with a croſs drain, inſide of the head-land; and from this laſt, are ſeveral lateral communications into the fence ditch, wherever the dip was favourable. The material uſed was ſtones, covered firſt with ſtraw, and as near the ſurface as poſſible, as the field is not meant to be taken out of graſs again. I am thoroughly ſatisfied there are large tracts of coarſe land in the Merſe, that would be very highly benefited by this mode of draining; as the rotteneſt hole that ever exiſted, if only ſuſceptible of the operation, and that judiciouſly performed, will be thereby rendered as ſound ſheep paſture as any in the kingdom. I am, &c.

*R. r.*

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Observations on Sheep.*

SIR,

IN your last Number 'A Cheviot breeder' says, that repeated experiments have completely established the superiority of the Cheviot breed of sheep, over the Forest and all other kinds in highland situations; that they attain early maturity, and that if any advocate of the contrary opinion wishes to have a public proof, there are breeders of the Cheviot sheep, who, when called on, will not shrink from making the trial. In the same Number, another Correspondent maintains, that it is absolutely certain, the Cheviot neither will, nor can feed on such coarse pasture as the Forest breed; that they are indolent, luxurious and tender; and that from fair and complete trials and daily observations, he is convinced, that on cold and stormy farms, the latter will attain the greatest weight, &c. And 'A breeder of the coalheaver's mutton,' (who, if I am not much mistaken, is well acquainted with all the breeds of sheep in Great Britain), says, that he has long thought the Forest a most valuable breed, and confessedly best calculated to withstand the severity of the cold upon high heathy mountains, where no other sheep he is acquainted with can subsist. I am now considerably concerned in breeding and feeding, and anxious to obtain information from men of experience; but, with such discordant opinions and statements before me, am unable to determine which is the most profitable kind of sheep. The breeding and management of live stock, is certainly of great importance, not only to the occupiers and proprietors of land, but the community at large; and as nothing is so convincing as the results of accurate and properly conducted experiments, it will be highly gratifying to me, and, I presume, advantageous to the public, if the above correspondents, or any other able and impartial breeders, will be so obliging as to communicate, through the medium of your Magazine, *a full and particular* account of experiments, instituted with a view of ascertaining the merits of the different breeds of sheep, together with their results. It is contended *by many* breeders, that the Cheviot are as hardy and healthy, on stormy mountainous heathy pastures, *from the time they are lambed, till that of their being drafted for fattening*, as the Forest sheep; that their weight and propensity to fatten are greater; and that these pastures will support as many, or very nearly as many, sheep of the one kind as the other. If their arguments are well founded, it seems to follow, that the Cheviot is the most valuable kind, their fleeces being worth 3s. to 4s. 3d.; whereas, those of the Forest breed are not

not worth more than 1s. 6d. to 1s. 8d. each. Indeed, if their ſtatement is admitted, and if their breed of ſheep (the Cheviot) were to ſupplant the Foreſt (black-faced, hairy-wooled breed) on all our Highland paſtures, the advantages which would reſult to the kingdom, from the increaſed value of manufactures in their ſeveral ramifications, would be immenſe. The truth of theſe ſtatements, however, the advocates of the Foreſt breed will by no means admit; and if *their* arguments, namely, that the Cheviot ſheep are too delicate and indolent for moſt of our Highland paſtures, be well founded, I think the black-faced kind ſhould, in certain very high and ſtormy ſituations, be preferred. For it ſtrikes me forcibly, that the beſt courſe for a farmer to purſue, is not to lay much ſtreſs on the fineneſs of his wool, or the deliciouſneſs of his mutton, (conceding nothing to the epicure, but what promotes his own intereſt), but to keep that kind of ſheep, which will, *for fleece and carcaſe*, leave him the greateſt profit on an average of years; or that will convert the produce of his paſtures, or a given quantity of food, into the moſt money in a given time. This converſion is, I humbly conceive, the criterion of excellence in ſheep and cattle. It is a principle, however, which ſeems to have been departed from in the experiment at Edgerſtone, (ſee page 525, vol. 3. of your Magazine), where the food was not weighed, and where the lean and voracious Highlanders would, perhaps, conſume more graſs than the Leiceſter ſheep, which, I underſtand, were as fat as a 'ſeal or Hampſhire hog' at the commencement of the experiment, *for which the wedders were choſen at two years old:* ſo that the valuable property of attaining *early* maturity, for which the latter kind of ſheep are ſo much diſtinguiſhed, was totally diſregarded. Beſides, Sir, when ſo much importance was to be attached to the proportional increaſe of weight, was it fair to try very fat againſt lean or half-fat ſheep? In the experiments of Mr Billingſley, (which I underſtand are inſerted in the 7th vol. of the Bath papers, and which are ſaid to have been conducted with accuracy and impartiality), the food was regularly weighed; but, having been taught to believe in the doctrines of the celebrated Mr Bakewell and his diſciples, particularly that 'the new Leiceſter ſheep are the beſt machines for converting turnips and other rich food into money,' I was much ſurpriſed and diſappointed, on being informed, that the reſults of theſe experiments were more favourable to the South-down, Cotſwold, and Mendip, than to the Leiceſter ſheep. Theſe reſults have made many converts, ſilenced ſome noiſy advocates for the latter kind of ſheep, and cauſed others to *waver* a little, in ſeveral parts of the country. It therefore ſeems incumbent on ſome of the followers of Bakewell and

Culley, *who are able to contend with Mr Billingsley*, minutely to inveſtigate and controvert the accounts of theſe trials which have proved ſo injurious to their favourite breed. That ſome of them may do ſo, and communicate their remarks to you for publication, is the wiſh of Yours, &c.

PASTOR JUNIOR.

*May* 14. 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Nature and Management of the Short Sheep; with Remarks on the difference between them and the Cheviot breed.*

## LETTER II.

SIR,

IN my laſt, I took a comparative view of the *Cheviot* and *Foreſt* breeds of ſheep; deſcribed the nature and properties of each, and adduced a few arguments, tending to ſhew that the latter alone is adapted to high and wet ſituations; and that all attempts to rear the former upon expoſed Highland farms, will be found improper, and, in the event, attended with diſappointment and loſs. Allow me now a few words more, in addition to, and in ſupport of, what I then advanced.

Farmers in Highland diſtricts have learned, from experience, to lay their account with three or four months of ſtormy and inclement weather every year, and often with ſuch falls of ſnow as render the higher grounds inacceſſible, and confine the whole flocks to the low paſtures, which thereby become foul and unwholeſome. No ſooner, however, does a thaw take place, and the brows of the hills begin to appear, than the Short or Foreſt ſheep (like Milton's Death and Sin, that ſnuffed the change on earth) ſets out, regardleſs of the driving fleets that yet deform the *day delightleſs*, aſcends the higher grounds, and aſſiduouſly gathers the green and juicy plants, ſuch as ling, moſs, heath, &c. which have preſerved their verdure through the ſevere ſeaſon. Theſe ſoon reviviſy the ſpirits, brace the ſyſtem with new vigour, and prepare the ewe for the fatigues of bringing forth her lamb, and the ſtill more ſearching duties of a nurſe. The Cheviot ſheep, on the contrary, whoſe conſtitutional indolence is increaſed by long confinement to the low paſtures, cannot be compelled to take to the higher grounds, but continues to creep about the bottoms and ſkirts of the hills, where vegetation ſcarcely exiſts, and where any food, that can be obtained, is truly unwholeſome, and

and ſuch as tends only to waſte and debilitate the ſpirits. The conſequence is, that inſtead of regaining ſtrength, ſhe becomes daily weaker and weaker, and often falls a victim at the lambing ſeaſon *.

But the propriety of rearing the Foreſt breed in preference to the Cheviot kind, upon Highland farms, will ſtill more appear, if we take into account the different degrees of danger to which the new dropt lambs are expoſed. In this reſpect, the moſt ſtrenuous advocates for the Cheviot breed, ſeem diſpoſed to acknowledge their inferiority. Indeed, it is not to be expected, that a weak, enfeebled, and diſeaſed ewe, can produce a ſtrong and healthy lamb; and when theſe puny productions happen to be uſhered into light, during ſtormy weather, they muſt inevitably periſh, as they are for the moſt part deſtitute of wool, eſpecially on the back and ſhoulders, to defend them from the pitileſs rains and ſleets which generally prevail about that period. No doubt, the lambs of the other breed, are equally expoſed to the inclemency of the weather; but then, being the offspring of healthy and hardy parents, and being well clothed with wool, even in the ſhorteſt places, from $\frac{1}{2}$ to $\frac{1}{4}$ inch in length, they are better able to reſiſt the fury of the ſtorm. Beſides, being naturally lively, and endued with much animation, they ſoon get upon their legs; while the Cheviot lambs, weak and enfeebled, continue to lye upon the cold earth, where numbers of them periſh in leſs than twenty minutes from their birth. The very form and make of the latter kind, operate powerfully againſt them at this critical time. The legs being long, the body heavy, ſupple and unmanageable, it is with much difficulty, and after many fruitleſs attempts, that they at laſt get upon their feet. When the day happens to be mild, lambs of both kinds may do well; but a continuation of ſuch days is not to be reckoned upon. The alternation of froſt and freſh, is extremely rapid, about the lambing ſeaſon, in ſuch climates as I am ſpeaking of;



* We may here notice the difference between ſheep that mend their conſtitution upon the high parts of the paſture, and thoſe who do it upon the low grounds only. As ſoon as the hills are clear of ſnow, the former begin to advance; but the latter make no progreſs before the new graſs comes, which is generally late. In the mean time, the ewes become more feeble and weak, as they advance in a pregnant ſtate; and, if graſs becomes plentiful all of a ſudden, they are apt to be attacked by a diarrhœa. They are not indeed liable to this diſeaſe, to the extent that *eild* ſheep are: yet it may, and often does affect them, ſo much, as to cauſe the wool fall gradually from the ſkin, whereby the animal is prematurely expoſed to ſevere cold, and the meliorating of its condition much retarded.

and it is no uncommon caſe, to ſee the mountains covered with ſnow, twice in twenty-four hours; and as often bared by ſtormy winds and daſhing rains. Theſe ſudden, and ſevere changes of weather, materially affect and injure, even the hardieſt race of ſheep; and ſurely, when this is the caſe, all attempts to rear a breed of a more delicate nature, in wet and expoſed ſituations, muſt be conſidered as highly improper, and eventually unprofitable to the farmer.

There is another diſadvantage, peculiar to the Cheviot breed, and which is very prejudicial to the intereſt of the lamb; I mean the dilatory way in which the ewe gives her milk. All ewe-milkers (at leaſt thoſe whom I have had an opportunity of conſulting), who have for ſeaſons milked both kinds, agree in this point; and it is known by experience, that a weakly lamb will live, and even thrive upon a ſhort ewe; but, if attached to a long one, will either die immediately, or, at the beſt, but waſte and pine away gradually. I ſhall only add, what is known by experience to every ſtoremaſter who has tried both kinds upon high-lying farms, that, taking an average of years, one third more *eild* ewes will be found among the Cheviot than the Foreſt breed, which is no trivial conſideration *.

Farmers, who enjoy dry ſoils and warm expoſures, may perhaps be inclined to think, that I ſpeak from prejudice to the one kind, and an overweening fondneſs and partiality for the other; but I can aſſure them that I am not actuated by ſuch ideas. What I advance is the reſult of long experience; and the only end I have in view, by publiſhing it, is to prevent farmers, who may enter upon Highland ſituations without a proper knowledge of the dangers and difficulties attending them, from engaging in ſchemes that will be found unprofitable to themſelves and the community at large.

Having, in my former letter, deſcribed the properties eſſential to the true Foreſt breed, I ſhall now lay down a few rules for raiſing a ſtock of that deſcription. If the farm has a large proportion

* Perhaps the beſt way for ſaving the lives of the Cheviot lambs, in a courſe of tempeſtuous weather, is, to build houſes in the moſt centrical places of the farm, with a fold attached to each. When a ſtormy day happens, the ſhepherd and his aſſiſtants (and the more he has, on ſuch occaſions, the better) ſhould collect as many of the new-dropt lambs as they can, and carry them through the folds into the houſes. The mothers, from cuſtom, will enter the folds without heſitation, and, when there, will eaſily be got into the houſes. This plan, has been tried on ſome farms, and found to anſwer well, as the ewes ſuffer nothing from a ſhort confinement, and the lambs are ſure to be ſaved.

portion of heath, it will be moſt properly employed in raiſing wedder ſheep for the Engliſh paſtures; for this valuable ſhrub, purifies and refines the carcaſe, as it advances in ſtrength and bulk, and thereby prepares it for an after feeding. Where a department of the farm is high and cold, and will not paſture ewes to advantage, it ought to be aſſigned to the breeding of dinmonts; but where the paſture is acceſſible to ewes through the moſt of the ſeaſon, they ought to have the preference, as being the moſt profitable ſtock. Hogs are alſo advantageous, when they can be brought through the winter without the ravages of any annual diſtemper; but where they are in a broken, unequal, and conſequently *unfattable* ſtate, dinmonting them becomes neceſſary, as this brings them to a nearer uniformity, and generally to a tolerably good condition.

The lambs undergo caſtration, when between ſix and ſeven weeks old. This operation checks the general ſpread of the ſyſtem; gives a dwarfiſh and effeminate caſt to the countenance, and puts a ſtop to the growth of the horn; therefore, if other circumſtances would allow, the delaying it for a fortnight longer would be highly beneficial.* As hot weather may, however, now be expected, as the ſeminal chord and its collateral blood-veſſels rapidly increaſe in ſtrength, and their various connexions become more entwiſted; this delay, how advantageous ſoever in other reſpects, might be attended with conſiderable danger; and therefore, after all, I am inclined to think, that caſtration ſhould continue to be performed at the uſual time. As to the operation itſelf, it ought to be performed with all poſſible tenderneſs, and the lambs, immediately after, carefully conducted to their dams.† After caſtration, the carcaſe rapidly encreaſes in

 fatneſs;

* It is ſomewhat ſtrange, that caſtration ſhould have ſuch oppoſite effects on the bull and the ram, by increaſing the growth of the horn in the former, and diminiſhing it in the latter. Doubtleſs, a proper inveſtigation of the cauſe, would lead to a clearer and juſter knowledge of both animals, than is yet obtained of either.

† When the lambs are caſtrate, a general inquiſition takes place, and there are always ſome diſcovered, which have the exterior marks of rams, but in reality are not. One kind, are called *Riglands*, having one ſtone in the ſcrotum, and another in the back, a little behind the kidneys. They are generally well made, and therefore, ſome ſtoremaſters keep them for the uſe of the ewes; a practice, that ought to be diſcontinued, as it is ſure of introducing a great number of the ſame kind into the ſtock. Taking away the ſtone from the ſcrotum, diſqualifies them from impregnating the females, but does not leſſen their ardour for coition, which inevitably reduces them once in the ſeaſon.

The

fatneſs; and the interſtices, between the ribs and the fleſhy parts, begin to be tolerably well clothed. The wool alſo turns ſofter; and the bleat, loſing its hoarſe, unequal tone, aſſumes one more continued and uniform.

The *ſpaining* ſeaſon commences from the 15th to the 10th July. By this time, lambs have acquired as much ſtrength, experience and ingenuity, as to ſearch for, chooſe, and eat what is proper and nutritive; and the menſtruum of the ſtomach has become ſufficiently ſtrong to digeſt and tranſmute, for the nouriſhment of the body, all the varieties of graſs, herbs, &c. that are lodged therein. It is not to be wondered at, if the inquietude and perturbation of ſpirit, occaſioned by their being taken from their mothers; the ſtate of alarm and terror they feel themſelves in, on being deprived of their guardians and protectors, and the painful and arbitrary diſtinctions of mark, buſt, &c. impoſed upon them, ſhould, for a few days, take their atrention in a great meaſure from their food, and conſequently interrupt their progreſſive advance: But when once theſe tender emotions are effaced, and they begin to feel the neceſſity of exerting themſelves for food, then they recommence thriving, which continues, (diſeaſe apart), till ſnows, bitter-biting froſt, and pinching hunger, in the following winter, reduce them to a ſtate of weakneſs and imbecility, ſometimes ſo great indeed, that life itſelf is in danger. I am, yours, &c.

A. S. L.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Remonſtrance of the Newcaſtle Coalheavers.*

SIR,

IT was only the other day, that I accidentally took up a Number of the Farmer's Magazine, in which I met with a diſquiſition upon ſheep-farming by Epicurus. Of the general merit of the paper, a man of my profeſſion muſt be an incompetent judge; but there is a paſſage in it, which particularly attracted my

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The other kind, is provincially called *Chuters*; perhaps, from their chacing and ſtriving to copulate with the ewes in rutting time. As they eject no ſemen, their efforts to impregnate the females, is ineffectual. They carry two ſtones in their back, where the Rigland has but one. Their horns, bend not like thoſe of the true males, and they grow wider and thinner at the root. Their face, has alſo a more effeminate look. Both kinds are remarkably hardy.

my notice, where he ſays, that the fat mutton, the breed of which he ſo ſtrongly reprobates, is only fit 'to glide down the throat of a *Newcaſtle Coalheaver.*'

Forcibly ſtruck with the dangerous conſequences which this might produce, by ſpreading an idea, that any mutton, however groſs and rank, would find a ready market among my ſable brethren, I indignantly put the Magazine in my pocket, and deſcended to the bowels of the earth, to communicate what I had ſeen. No ſooner had I read the odious paſſage, than the whole ſubterraneous regions were in an uproar. An old heaver, who was well known to delight in a mutton chop, inſtantly propoſed, that, armed with ſhovels and pick-axes, we ſhould ſally forth, and ſwear vengeance and deſtruction againſt the man who dared to promulgate ſuch a doctrine. Another ſuggeſted, that a ſelect few ſhould be diſpatched, to bring the culprit, bound hand and foot, to our dark abodes; and there, by groſs feeding, convince him of its dangerous tendency to people of our ſedentary habits. In ſhort, the ruin of Epicurus ſeemed inevitable, had not ſome one, more cunning than the reſt, hinted, that there might be ſome difficulty in diſcovering where he was to be found. This puzzled us a good deal. Some thought he muſt be an Eaſt-Lothian farmer; but, none of us had heard of any family there of that outlandiſh name. Others conjectured, with great ſeeming probability, that it muſt be the Greek or Latin name for an *Epicure.* But I, from the circumſtance of my father having been a ſchool-maſter, remembered to have heard of ſome heathen philoſopher of that name; and ſuppoſing, that arguments would have more weight with a gentleman of that deſcription, than violent meaſures, propoſed that a calm remonſtrance ſhould, in the firſt place, be written him, through the medium of your Magazine, before proceeding to extremities; requeſting him ſeriouſly to conſider the ſubject, and to take ſome effectual meaſures for doing away the evil likely to be occaſioned by his eſſay. This was unanimouſly approved of, and I was appointed to convey the ſentiments of the meeting to you.

I have, therefore, Mr Editor, to beg you will inſert this in your next Publication; and I would fain hope, that Epicurus will be brought to be of opinion that the farmers who raiſe this abuſed breed of ſheep, muſt find ſome other channel for them to glide in, than the throat of

A NEWCASTLE COALHEAVER.

*Newcaſtle-upon-Tyne, 25th Aug.* 1803.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Recipe for the Diſeaſe called Red-Water.*

SIR,

Obſerving in your publication (No. XII.) for November laſt, a recipe to cure the bloody urine in horned cattle, I take the liberty of communicating one that has been ſucceſsfully uſed during the long practice of a noted cow doctor, now dead, communicated to me by his ſon, a clergyman; and which, for upwards of twenty years, I have not known to fail in one ſingle inſtance. Yours, &c.

24. *Jan.* 1803. K.

*To cure the Bloody Urine, commonly called Red-Water.*

For a cow, take four ounces of oil of turpentine, and one ounce of bole armenic, powdered, given cold in one quart of blue milk; afterwards rinſe the horn and bowl the ingredients were mixed in, with one quart of ſpring water, and adminiſter to the beaſt; then let her faſt two hours, when ſhe may be turned out to eat and drink as ſhe pleaſes. If ſhe is coſtive, give half an ounce of julap in an Engliſh quart meaſure of new ale, with half a pound of treacle, pretty warm.

N. B. For an ox five ounces of the above, a bull ſix ounces: but theſe doſes are too ſtrong for any beaſt under two years.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE,

*The* BARON MUNCHAUSEN, *greeting!*

SIR,

As my *adventures* have long been in the poſſeſſion of the public, my name and character cannot be unknown to you.

Marked as I have been by my deſtiny for an extraordinary perſonage, the events of my life have run in a courſe widely differing from that of ordinary occurrences; nature hath manifeſted herſelf to me, under forms inacceſſible to uſual experience; nor would it be proper that the generality of mankind ſhould found upon every experience of ſuch a ſingular perſonage as myſelf, as a ground of expectation of ſimilar reſults in ſimilar circumſtances. *Cherryſtones*, for inſtance, *fired by me, from a muſket, into the ſkin of a live deer, and producing, in due ſeaſon, a crop of cherrytrees, upon the*

*the living deer's back :* * This, I should consider as one of those singular kind of manifestations, reserved exclusively to myself; nor would I, by any means, inculcate a corresponding practice, as a feasible improvement in the art of raising fruit-trees.

Even to myself, the extraordinary phænomena, witnessed, have not always appeared uniform and consistent, as may be seen at large, in the book of my adventures.

I would, by no means, propose my experiences as a rule of practice, excepting in cases, *where not only the results have, to myself, proved always the same upon repetition; but where, also, my results are supported by the general analogy of the usual course of nature.*

Under these limitations, I shall lay before you a few of my experiments, which I conceive may conduce to utility in regard to agricultural economics. Like other great inventors, I find I am in constant danger of being robbed of my due fame by plagiarists; and it is probable, that in the course of correspondence, I may vindicate to myself, many experiments pretended to have been made by various correspondents of yours; but which, in fact, never were made, but by me the Baron Munchausen.

I. *Talicotian Experiment.*

All your readers who have read Hudibras, must be acquainted with the experiment, upon which is founded the celebrity of Talicotius.

*The learned Talicotius, from*
*The brawny part of porter's bum,*
*Cut supplemental noses, which*
*Lasted the date of parent breach:*
*But, when the date of knock was out,*
*Off drop't the supplemental snout.*

That

* Lest such of our readers as may not have heard of Baron Munchausen, should be apt to conjecture that we have obtained a correspondent from the lunar regions, we think it proper to observe, that about twelve or thirteen years ago, a book was published under the title of the Travels of Baron Munchausen, evidently intended to ridicule those stories of wonder, which travellers in distant and unknown countries, often attempt to palm upon their readers; the Baron's wonders are so superlative in magnitude, as to make every thing else of the kind appear like pigmies. We apprehend the intention of our present correspondent is of the same nature, that is, to ridicule wonders in farming, and that abuse of analogical reasoning, from which wonderful conclusions are often speciously inferred, or asserted directly as facts, though not warranted by the fair verification of actual experiment. But the Baron shall be allowed to speak for himself. N.

That the art of thus forming artificial noſes, (however ludicrouſly repreſented, after his own manner, by Butler), was, in fact, ſucceſsfully practiſed by Tagliacotti, we are aſſured by Ferrier, the learned detector of the plagiariſms of Sterne. Taking therefore the fact for granted, I began to conſider to what uſes the experiment of Tagliacotti might be applied, farther, than merely the redreſſing of noſes, curtailed by the great pox. One difficulty indeed preſented itſelf, as to the extenſion of the experiment; which was the entire ſympathy ſuppoſed to ſubſiſt betwixt the graft and the original ſtock from which it was taken, notwithſtanding of this total diſſeveration to the eye of ſenſe:—

*But, when the date of knock was out,*
*Off drop't the ſupplemental ſnout.*

Did this ſympathy in fact ſubſiſt; then the application of the principle might, eventually, prove but temporary in its effects. But, on farther reflection, I was convinced the exiſtence of the ſympathy was a mere arbitrary ſuppoſition; in fact, a mere vulgar prejudice, ſimilar to that of the ſympathy ſuppoſed ſubſiſting betwixt the wound, and the ſword that inflicted it; which in the chirurgical practice of theſe times, cauſed the application of medicine to be made ſolely to the inſtrument; probably, indeed, to the no little advantage of the wound; which was thus left to heal according to the firſt intention, through the *vis medicatrix naturæ*.—Very poſſibly Tagliacotti himſelf, as a man of humanity, might have originally invented and been careful to inſtil this prejudice of the ſympathy, that the rich patient might ever after continue anxious to provide for the comfort of the poor perſon who had imparted from his breech, the materials for refitting the other's noſe; and indeed, it would conſtitute a moſt efficient bond of ſocial union, were the noſe of the rich, ever and univerſally, thus to feel in uniſon with the breech of the poor.

Having thus ſatisfied myſelf, that the ſympathy alleged by Butler, was a mere gratuitous ſuppoſition, which needed not give me any uneaſineſs in the proſecution of my experiments; I next turned my attention to the general analogy of nature, to diſcover how far *it* tended to overthrow or confirm the probability *of the concretion and homogenization of diſſimilar or different parts of the ſame ſpecies, or of different ſpecies of animals, thus artificially conjoined, according to the practice of Tagliacotti.* In animals, I could find few facts, upon the analogy of which, I could lay hold; unleſs, indeed, the two-bodied children, preſerved in the muſeums of the curious, or the cows with two heads exhibited at country fairs, might be conſtrued into analogous facts.

To

To say truth, there is a sort of restiveness in animals, both rational and irrational, against yielding themselves up quietly to become the subjects of philosophical experiment, which unhappily retards the advancement of the sciences. Would you believe me Sir, when I assure you, upon *my veracity*, that, in all your Scots metropolis, I could not find a single noseless wh.re, nor a porter, who would submit to the Talicotian experiment; although I promised to the one, a nose of the most perfect antique Grecian *costume, gratis;* and to the other, an indemnification, amounting to ten times more than his whole breach was worth!

Despairing, thus, of finding suitable analogies in the animal kingdom, I turned my attention next to that of vegetables, a much more quiet and pacific subject of experiment. Neither let it be thought that the analogy betwixt the two, is any way obscure or distant. For what, pray, is an animal, but a vegetable, carrying its roots inclosed within its own body; and voluntarily supplying these roots with the proper substance of its nutrition, by ingestion? and what is a vegetable, but an animal, with its roots fixed in the soil, whence it is nourished; and thence, as I suppose, deprived of the power of locomotion? From the one to the other, of subjects so similar, the inferences of analogy can never be considered as strained. Here then, in the varied instances of *budding, grafting, inoculating, inarching,* I found the most incontrovertible confirmation of the principles of the Talicotian practice. Here I was presented with innumerable specimens of the union and homogenization of the parts of *species* the most dissimilar; with the most wonderful mutual intercommunion of properties the most different.

Fortified by so many strong analogies, I forthwith proceeded to the extension of the Talicotian practice, to the purposes of rural economics.

But, here, methinks I hear you or your readers exclaim, *why this long preamble? why not come at once to the point?* Let me, however, observe, once for all, that such interruptions only bespeak ill-breeding. Important experiments, like important personages in society, cannot properly be introduced to company, without a suitable prefatory ceremonial.

At the time I was about to institute my experiments, your wisest political economists had determined that the prosperity, if not the very salvation of your British Island depended upon the extension of the growth of fine wool; whilst others seemed, as sagely, to be of opinion, that, if all your flocks of sheep were converted into the bearers of fine clothing wool, you should not have an ounce of coarse wool for a single rag of blanketing or petticoat. I therefore considered that the views

of

of each might be satisfied, and their mutual objections silenced, if only a sufficiency of each kind of wool-bearing animals could be made to subsist on your lands, to furnish such abundance of each kind of wool, as should satisfy the demands of their respective patrons. But, as your lands fit for the purpose, are already pretty sufficiently stocked with sheep—excepting, indeed, your English commons, which I understand to be kept sacred for geese, in commemoration of their having once saved the capitol of Rome—the difficulty recurred as to the possibility of multiplying the quantity of wool-bearers. A thought once occurred, of substituting the Llamas, or sheep of Peru, for your usual beasts of burden: this, however, soon gave way to to a superior project, since followed up in practice; which was, the contrivance of making your horses bear a crop of wool, instead of hair, upon their skins.

For this purpose, I caused a foot square of skin, to be neatly flayed from off one of my horses; which was instantly replaced by an equal portion of skin, warm from a sheep's back; the seams were connected by proper sutures, and the whole covered with a suitable plaster. And I found, at the end of nine weeks, that the old and supplemental skins had become perfectly continuous, and equally adherent to the flesh below.

Being somewhat cautious, in an experiment entirely new, however much justified by the analogy of nature, I durst not venture upon a continuation of the process, till after the lapse of considerable intervals of time: Suffice it to say, that in the space of two years, by repeating the operation, I succeeded in clothing my horse in sheep skin, completely from head to foot. I afterwards, killed my horse, in order to ascertain the effect of the action and reaction of the sheep-skin on the horse-carcase, and of the carcase upon the skin, in producing a mutual intercommunication of their respective properties. As, belike, few of your readers have, like myself, had the opportunity of regaling upon horse flesh, with the Tartars, it would be impossible for me, to convey to them any distinct conception of the peculiar relish of my horse-mutton; I shall only say, that I believe it such as would prove exquisitely agreeable to most palates. The pellet approaches most to the nature of horse hide; only, I believe, to make good tanned leather of it, it might require a liquor of a somewhat stronger impregnation of tar. The wool, I found to be of the coarser kind, approaching somewhat to the nature of hair; and probably, more peculiarly adapted to the manufacture of camelots.

In consequence of success, I have grown bolder in my experiment; and against next season, I propose to flay a horse at once,

once, and to clothe him, immediately, with as many ſheep ſkins as ſhall ſuffice for his complete inveſtiture.

After all, I muſt confeſs that this mode of procuring an additional number of wool-bearing animals, is laborious, tedious, and expenſive—not to mention the pain occaſioned to the animals, in the various ſtages of the proceſs of flaying alive. Let us not, however, deſpair of ſucceſs. And, here, let me beg the utmoſt attention of the reader, whilſt I ſhall develope to him one of thoſe *arcana naturæ*, through which, we may hope in time to be extricated from theſe *dilemmas!*

You are all, no doubt, acquainted with the celebrated Buffon —*he*, who, *par excellence*, has been deſigned *Nature's own interpreter—he*, who, deſpiſing the teſtimomy of his own neat-herd, in proof of the negative (at all times ſo very difficult to eſtabliſh), and truſting rather to his own reaſoning, from the known analogies of nature—has eſtabliſhed, by mere dint of argument, *a priori*, the fact, *that our cows annually ſhed their horns, like the deer.*—This fame Buffon, I ſay, has alſo eſtabliſhed another fact, upon the analogy of which we may depend, in believing, that, after a certain period, the neceſſity of the Talicotian proceſs to produce wool-bearing horſes will be altogether ſuperſeded. Buffon has ſomewhere aſſured us, that, in propagating continually from a race of ſetting dogs, whoſe tails are uniformly docked, a race is at laſt produced with tails naturally of the exact length required—Nature apparently becoming pettiſh, and at length refuſing to exhauſt her powers unneceſſarily, in producing a redundance, which ſhe ſees uniformly rejected as a ſuperfluity. There exiſts, indeed, in Northumberland, a race of tailleſs ſhepherds dogs, (deſigned *ſelf-tailed*), and which I, Baron Munchauſen, aſſert to have been produced in this ſelf-ſame identical manner. Is it not, then, demonſtrably probable, at the leaſt, that, if we continue to propagate from a race of horſes, continually converted into wool-bearers by the Talicotian practice, the renitency of nature may be at laſt overcome by the pertinacity of man, and that ſhe ſhall at length conſent, of her own ſpontaniety, to produce a race of horſes ready wool-clothed to our hand?

It has been ſurmiſed, that ſeveral readers of my adventures have called in queſtion the truth of a ſtory I there relate, *of an wolf having attacked, from behind, the horſe which I drove in harneſs, eating up before him, all within the ſkin, till he found himſelf completely enveloped in* it, *and fixed in the harneſs, exactly in my horſe's place; and of my continuing to drive him to the end of the ſtage, before I perceived the change of* qui pro quo *which had been put upon me.* This, I indeed acknowledge, might have

been

been one of theſe very rare phænomena which are excluſively manifeſted to myſelf alone. I truſt, however, none of your readers will entertain the ſmalleſt doubt of the truth of my Talicotian experiment, which appears ſo conſonant to the whole analogy of nature. If they do, I can only ſay, they may ſatisfy themſeves by examining my parks of Calypſo, in the land of Utopia; where they will find horſes in all the ſtages of their ſheep-ſkin inveſtiture; where alſo they will find cows more or leſs clothed with hogs-ſkin; a practice, which, if prevalent, might render your iſland leſs dependent than at preſent upon the Continent for hogs briſtles.

Beſides the augmentation of the quantity of coarſe wool, a number of economical advantages might be ſtated, as reſulting from the Talicotian practice. As, *firſt*, that we would have no farther occaſion for ſaddles; but might ride bare-backed, like our Scythian anceſtors, without danger of galling behind.

*Second*, Bad horſemen would no longer, for the purpoſe of breaking their fall, be reduced to the ſingle reſource of catching hold of the mane; but might ſtrike their talons, for a faſt hold, into any part of the fleece.

*Third*, The reaction of the ſheep-ſkin producing a certain degree of ſheepiſhneſs of nature and temperament, gelding might be laid aſide, as no longer neceſſary to produce tameneſs. Stallions might be uſed as cavalry: And, were the proceſs commenced from the ſtrong-horned Linton breed of ſheep, theſe ram-horned ſtallions might be taught to box like rams; and to charge infantry, by battering them down, in whole battalions, without danger of having their impenetrably fortified heads in the ſmalleſt degree annoyed by the puſh of the bayonet. Indeed, I am inclined to prefer very much this my mode of warlike annoyance to the one ſomewhere recommended by a correſpondent of yours, or by ſome other œconomical projector, of training bulls to gallop, after the manner of the Eaſt Indians and the African Caffres; becauſe it has been perfectly aſcertained, that, in their quarrels at paſture, a well horned ram has ever proved an overmatch for the bull; nor can it eaſily be conceived what force of ſtability could reſiſt an overturn from a battering-ram-head, impinged with the prodigious *momentum* reſulting from the ſo much ſuperior velocity, joined to the ſo much ſuperior weight of body of the horſe. You ſhall ſoon hear from me again.

*Vale.*

MUNCHAUSEN.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Culture and Uſe of Buck-Wheat.*

SIR,

CONVINCED of the high utility of an agricultural Work, ſupported by ſo great a number of practical farmers as yours has hitherto been, and fully ſenſible that it can only continue a vehicle for experimental knowledge by the correſpondence of ſuch, I beg leave to offer my mite to the undertaking, in the following thoughts on the culture and uſe of Buck-wheat; truſting you will ſuppreſs ſuch parts of the following letter as you may find trivial, or reject the whole, ſhould you deem it unworthy of inſertion.

This plant, *polygonum fagopyrum* of Linnæus, is known in every quarter of the globe. In China and Japan, it forms a very conſiderable portion of the food of the inhabitants; it is likewiſe generally eaten in Switzerland, and the ſouthern parts of France; and in Flanders, it is one of the moſt conſiderable branches of huſbandry. Gerardi ſpeaks of it as cultivated in England about the year 1597, particularly in the counties of Lancaſhire and Cheſhire. It appears, however, to have made very ſmall progreſs in this kingdom, and has perhaps received leſs attention than it deſerved.

Buck-wheat was introduced into this diſtrict, the Eaſt Riding of Yorkſhire, a few years ſince, by Sir Henry Vavaſour, Baronet, whoſe ſpirited attention to agriculture, and thorough knowledge of the Flemiſh huſbandry, has rendered the moſt eſſential ſervice. It is particularly adapted to light, ſandy ſoils, and will afford a plentiful produce in land that is by no means in good condition. I do not know any crop equally uſeful, in ſuch land, to follow the ruta baga, or other turnip which has been eaten off late in the ſpring, or where it is deſired to ſow down a field with graſs ſeeds, that has not been thoroughly cleanſed from weeds the preceding fallow; as the time of ſowing it (which in our climate ought not to be earlier than the firſt week in June) gives every opportunity for getting the land into fine order. Buck-wheat is ſaid to deſtroy weeds; but this is a circumſtance I can by no means aſſert; as, in my practice, I have noticed the contrary: and it appears to me a ſingular propoſition, though one which ſome have endeavoured to prove, that buck-wheat, from the cloſeneſs of its growth at the top, ſhould ſmother and deſtroy weeds, whilſt clover and the other graſs ſeeds receive conſiderable benefit by the ſhade it affords them from the piercing heat of the ſun: Therefore, although

I ſtrongly recommend the ſowing of graſs ſeeds with buck-wheat, when there is not ſufficient time to prepare the land for a barley or oat crop, I would nor by any means adviſe the farmer to truſt to buck-wheat for deſtroying thoſe weeds that may remain in the ground, but endeavour by every poſſible care to extirpate them entirely; as the firſt principle of agriculture, muſt be the thorough cleanſing of all land from weeds. The quantity of ſeed ſhould not be leſs than two buſhels, or more than two and a half buſhels, Wincheſter meaſure. When graſs ſeeds are ſown, the ſmaller quantity will be quite ſufficient, taking care to harrow the buck-wheat exceedingly well, before the other ſeeds are ſown; and when they are, I find it the moſt adviſeable practice to roll them directly, and harrow only once immediately after. It will be remembered, that in theſe directions, I am ſpeaking only of ſuch deſcriptions of land as contain a conſiderable portion of ſand or moor; for I am of opinion, that it is only on ſuch ſoils, that buck-wheat can be conſidered a valuable crop. Whilſt upon the ſubject of laying down land to graſs, I beg leave to obſerve, that farmers too generally ſow them in a ſtinted quantity; for two or three year leas, not leſs than eighteen pounds of graſs ſeeds; and where the land is not good, an addition of a quarter of a peck of rye-graſs *(folium perenne)* ſhould be allowed. If the buck-wheat is mown when coming into flower, and led home as food for the draught horſes, cows, young beaſts and pigs, which is, of all others, the moſt profitable mode of uſing it, the graſs ſeeds will be much benefited. M. de Salis, in Dr Hunter's recent valuable publication of Georgical eſſays, particularly enlarges upon this ſyſtem; and he is the only perſon, I know of, who has favoured the public with any experiments upon this head. There is a general idea, that cattle of all kinds diſlike it in its green or flowering ſtate; but this is the effect of prejudice alone. All cattle, indeed, are apt at firſt to neglect food to which they are unaccuſtomed; but from my own practice, I conſider this method of uſing it exceedingly beneficial, and am fully convinced that it is a plant highly nutritious: Pigs in particular are remarkably partial to it, and I think thrive equally well upon it as upon red clover. It has ſome advantages over red clover; it will produce a far more weighty crop, and of courſe makes an additional quantity of manure: it is alſo to be raiſed in the ſhort ſpace of two months, and that upon land which could not be got into order for any other crop; and the expence of ſeed is not more than one half the expence of red clover.

The advantages of keeping a conſiderable ſtock upon green food in the farm-yard, throughout the year, muſt be generally allowed; the beſt farmers in almoſt every county in this iſland regularly

gularly practiſe it; and I doubt not but that this will daily gain ground. Red clover certainly is the beſt plant we know of for this purpoſe, (ſainfoin and lucerne excepted, and theſe can only be raiſed upon particular ſoils): but as the ſame land will not grow red clover for a number of years without change, and as all green crops ſhould be as near the homeſtead as poſſible, to leſſen the expence of leading; ſurely, upon a ſoil ſuitable for the growth of buck-wheat, it is a very valuable acquiſition, in moderate quantities, as a variety of green food.

It is further uſeful as a manure. Upon a clean fallow, I have derived conſiderable benefit from ſowing it as a preparation for wheat; rolling it down as ſoon as it is in full flower, and immediately ploughing it in. Its great ſucculency preſently brings on a degree of fermentation, that highly enriches and ameliorates the land; the only objection is, that it renders it rather too light for a winter crop. I purpoſe, this ſummer, ploughing in ten acres of buck-wheat upon a poor ſand, which, after a plentiful liming the next ſpring, I ſhall ſow down with tares and graſs ſeeds, as paſture for ſheep: in this caſe, the lightneſs and amelioration of the ſoil will be of infinite ſervice; ſeeds always coming beſt out of the ground when in that ſtate; and the treading of the ſheep will afterward render the land as firm as can be required; though a heavy roller uſed three or four times in the ſummer, would level any little inequalities of ſurface, and benefit the graſs.

Laſtly, as a corn crop, buck-wheat will be often found both uſeful and profitable, particularly in indifferent ſeaſons, as land may be ſown with it, that could not in proper time be ſown with oats or barley. The produce may be ſtated, upon the average, between three and four quarters per acre; it would be conſiderably more, did all the grains ripen together; but that never appears to be the caſe, as ſome parts of the ſame plant will be in flower, whilſt others have perfected their ſeed. It is harveſted in the ſame manner as barley, requiring only a little more time, as, from its great ſucculency, it is liable to heat; on which account, it is better to put it in ſmall ſtacks, of five or ſix loads each, than in either a large one or a barn. Buck-wheat is leſs liable to injury from a wet harveſt that any of the white crops; and the ſtraw is by no means ſo indifferent a fodder as many have reported.

Theſe obſervations are made from my own growth of it; and as I truſt I have not permitted any partiality for the grain to miſlead my judgement, they may, I hope, be relied upon. I would by no means be underſtood as wiſhing to recommend farmers to cultivate buck-wheat upon a large ſcale, in preference to oats or barley; but certainly it has ſufficient advantages, to give it a place

among crops commonly cultivated, at leaſt upon all light ſoils. I confeſs myſelf ignorant of the proportion of nouriſhment drawn from the earth by the various plants; but it appears to me, that buck-wheat does not exhauſt the ſoil ſo much as moſt others; I found my opinion upon its being a leguminous plant, and growing to maturity in ſo very ſhort a ſpace of time. Men of fortune would find it eligible to ſow in ſmall quantities, on the borders of woods or plantations, as an alluring food for pheaſants; and it is perhaps the beſt grain we have, for the feeding of pigs or poultry. Horſes thrive well upon it; and of late years the diſtillers in London have bought it readily at a price equal to that of barley. CHARLES HOWARD.

*Melbourne Farm, Pocklington, May 29.*

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Experiments in the Culture of Buck-Wheat, and Obſervations on the South-down Sheep.*

SIR,

IN agriculture, as in other ſciences, it were extremely unfair to record only ſuch trials or experiments as prove ſucceſsful. As much, perhaps more, is often to be learnt from unſucceſsful reſults, as from thoſe experiments which ſucceed moſt perfectly. Yet, like medical quacks, I much fear the old ſaying is frequently verified with experimental agriculturiſts:—What good they do, the world proclaimeth; what evil they commit, the earth covereth. In conformity with the principle advanced in the outſet of this communication, I propoſe to record in your valuable Work, the reſults of ſome abortive experiments which have been attempted on my ſmall farm; perhaps, ſome of your more experienced Correſpondents may point out the cauſes of my want of ſucceſs, and the means by which ſuch crops as I attempted may in future be cultivated in this country.

A good many years ago, having read in one of Mr Marſhall's ſurveys, that *Buck*, commonly called Buck-wheat, or more vulgarly Buckety-wheat, was much cultivated in Norfolk as a valuable food for fattening pigs and poultry; and having heard that its flour made excellent pancakes, I gave it, as I thought, a fair trial. In the corner of a field, which had been turnips immediately before, eaten by ſheep on the ground, and which was to be ſown up with clover and rye-graſs, I ſowed a peck or two of buck at the ſame ſeaſon with the barley. The buck grew indeed; but turned out ſo very poor a crop, that the graſs and weeds entirely

ly got the maſtery, and it never was worth the reaping. I am ſure, I could not have procured from the patch, half the quantity of ſeed which was ſown.

Laſt year, 1802, on a ſmall field of very good turnip ſoil, with a ſound gravel bottom, which had been turnips the preceding crop, thoroughly limed and dunged, and eaten off by ſheep, I ſowed a crop of barley in drills; and with the ſecond hoeing, gave about a buſhel and half of ſaintfoin ſeed, and eight pounds of red clover to each acre. The clover grew extremely well; and a thin ſprinkling of ſtranger plants appeared, which I concluded might be the ſaintfoin. Unluckily, however, for my experiment, the barley crop became exceſſively rank; and, after harveſt, I could only find the clover in ſcattered patches, and could not be certain that a ſingle plant of what I had conceived to be ſaintfoin remained. Anxious, however, to give every chance to my experiment, I allowed the field, this year, to remain untouched, till I had completed my turnip fallow, about the middle of June. I could not then obſerve a ſingle plant, that could be ſuppoſed ſaintfoin, and the clover was ſo exceſſively thin, as not to be worth preſerving. The whole field, about two and a half Engliſh acres, had become a luxuriant crop of what we call here *knap-gowans*, and threatened to be completely poiſoned by that weed. I therefore ploughed and harrowed it three times, and made it again into turnips; which, from the uncommon drought of this ſeaſon, will never, I dare ſay, have roots of half a pound weight.

My third unſucceſsful experiment was likewiſe tried laſt year. A very ſmall field, not an acre of ground, which had received a complete ſummer-fallow, with both dung and lime, was ſown laſt Auguſt, 1802, with lucern, in drills of about a foot interval. The ſeed vegetated to a wiſh; but the froſts of laſt winter killed every plant. A few indeed, at diſtant intervals, recovered in ſpring, and grew very decently, puſhing out long ſtrong and carrot roots; but their number was ſo inconſiderable, and the weeds ſo very abundant and luxuriant, that it became neceſſary to plough all down.

Notwithſtanding my total failure in the cultivation of ſaintfoin and lucern, I have by no means given up the idea of trying both again, at ſome future opportunity; and ſhall certainly communicate the reſult to you, whether ſucceſsful or not. In the mean time I beg leave to requeſt ſome of your more experienced Correſpondents to point out ſuch circumſtances as they know are calculated to ſecure ſucceſs. As for buck-wheat, I am, at leaſt for the preſent, diſinclined to give it any farther trial; having ſeen an attempt as completely unſucceſsful as my own, on very ſuperior ſoil, and in the management of a moſt attentive and intelligent agricultu-

riſt; who, by the by, has ſucceeded in the culture of carrots; and whom I invite, if he ſhould ſee this, to communicate to you a detailed account of that branch of huſbandry; and likewiſe of his other numerous experiments in agriculture and horticulture. He cannot miſtake in this alluſion.

A very conſiderable improvement has lately been adopted in this neighbourhood, in the conſtruction of wind-mill ſails; but which I cannot properly deſcribe, being no mechanic, and therefore, not having given them that attentive examination which they certainly merit. The ſails are compoſed of a number of narrow webs of canvaſs, mounted upon rollers, and placed tranſverſe to the arms. Each arm is furniſhed with an iron rod, and ſome ſmall toothed iron wheels, ſo adjuſted, that in ſtrong winds the ſeries of ſmall ſails roll up, or furl, as it were, of themſelves; and, upon the ſubſidence of the wind, roll out, or unfurl again; thus preſerving a very conſiderable degree of equability of motion, and conſequently of power; and preventing in great meaſure, if not entirely, all danger of the wind-mil running amain.

A moſt ſpirited and intelligent country gentleman, in my neighbourhood, has lately purchaſed a ſmall flock of South-down ewes and rams, meaning to give them a trial. Though I do not pretend to be a competent judge of ſuch ſheep, I muſt preſume to ſay, they by no means promiſe to be an acquiſition to this corner of the country. Their wool, indeed, ſeems remarkably fine, even conſiderably ſuperior to that of the Cheviot or *long* breed; but their carcaſes are, to all appearance, extremely inferior, even to the common run of our improved *ſhort* ſheep, or new Leiceſter. Their legs are long and coarſe; their carcaſes looſe, thin and lank before; their backs long and hollow; their heads large; their faces and legs, black, dun, or mottled; and I ſuſpect, they will turn out very troubleſome gueſts in an enclоſed country, I mean as fence-breakers, and very little inferior in wildneſs and agility to the Lammermuir or Tweeddale breed.

It is, however, certainly of moſt material importance, that more than one breed of ſheep, eſpecially in reference to wool, ſhould be carefully improved in all poſſible reſpects, and adapted with judgment, and by means of experience, to various ſoils and ſituations. I doubt, if, at preſent, there is any breed in the iſland to be compared, for profit to the farmer, on good ſoils, with abundance of winter food, to the new Leiceſter ſheep: but as their wool is only fit for certain purpoſes, were they to become univerſal, or even too general, it would become a drug, and wool for finer fabrics vaſtly too ſcarce and dear. On theſe principles, I imagine, that the South-down breed of ſheep, by

proper

proper management, and by ſelection of the beſt formed individuals of both ſexes to breed from, may become a very valuable variety ſome time hence, when the new Leiceſter may, perhaps, have been too largely diffuſed. On this ſubject, however, we need be under no apprehenſions: The ſagacity of agriculturiſts is ever alive, as it ought to be, to diſcover what is beſt for their preſent intereſts; and, whenever long combing wool ſhall be no longer in requeſt, and fine ſhort wool is in demand, their attention will naturally turn to the ſide on which profit is moſt readily to be procured. In the mean time, it is highly laudable for ſpirited country gentlemen to try any breed, which, either ſpeculatively or experimentally, promiſes to be uſeful. Such conduct keeps alive the ſpirit of inquiry and compariſon; and preſerves and propagates varieties of that moſt uſeful animal, ready at all times to be taken up, on an extenſive ſcale, by the profeſſional and experienced agriculturiſt. My own opinion, though of little value on this ſubject, is, that the South-down is better adapted for dry upland paſtures, not coarſe mountain ſituations; and the new Leiceſter for improved low-land grounds, which can always command a full ſufficiency of ſucculent winter food; and that without this laſt, eſpecially turnips, the new Leiceſter cannot be profitably kept any where.

In thoſe parts of England, where the barbarous townſhip huſbandry prevails, and where its almoſt neceſſary concomitant, folding the fallows, is ſtill even enjoined, to attempt a flock of new Leiceſter ſheep, muſt be the height of folly; and, if obſtinately perſiſted in, muſt neceſſarily end in ruin both to the flock and the maſter. But, I believe, the South-down ſheep poſſeſs ſufficient hardihood to bear up againſt all the miſeries of that wretched ſyſtem, with tolerable negative ſucceſs: They can live and produce a ſcanty fleece, and a ſtarved ſtore lamb, where the new Leiceſter muſt of neceſſity fall a martyr to ancient prejudices, leaving little elſe than its naked *pelt* to the farmer.

*Merſe*, 15. *Sept.* 1803. *R. r.*

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Obſervations on the Act for making better Proviſion for Parochial Schoolmaſters.*

SIR,

YOU have at different times recommended an augmentation of the ſalaries, paid by the landed intereſt to parochial ſchoolmaſters; and in laſt Number, (p. 352), expreſs much ſatisfaction

that a bill had paſſed through Parliament, which you think will meliorate their ſituation conſiderably. Give me leave to ſay, that if you had beſtowed your uſual attention upon the ſubject, you would not have rejoiced at the late enactment. If the ſchoolmaſters were conſulted upon that occaſion, and gave their approbation to the *whole* clauſes of the bill, then I muſt be allowed to declare, that they have, like Eſau of old, ſold their birth-right for a meſs of pottage. Let any liberal-minded perſon examine the following clauſe, which ſtands the 21ſt in the bill, and ſay, whether the ſchoolmaſters of Scotland are not thereby deprived of rights belonging to every other claſs of Britiſh ſubjects.

'*And be it enacted, That when any complaint from the heritors, miniſter, or elders, againſt the ſchoolmaſter, charging him with neglect of duty, either from engaging in other occupations, or from any other cauſe, or with immoral conduct, or cruel and improper treatment of the ſcholars under his charge, ſhall be preſented to the Preſbytery, they ſhall forthwith take cognizance of the ſame, and ſerve him with a libel: if the articles alleged, appear to them to be of a nature which requires it, and having taken the neceſſary proof, they ſhall acquit, or paſs ſentence of cenſure, ſuſpenſion, or deprivation, as ſhall appear to them proper, upon the reſult of ſuch inveſtigation;* which judgement ſhall be final, without appeal to, or review by, any court, civil or eccleſiaſtical: *And in caſe they ſhall depoſe the incumbent from the office of ſchoolmaſter, his right to the emoluments and accommodations of the ſame ſhall ceaſe, from the time of his depoſition: And in caſe he ſhall fail or refuſe to remove from the ſchoolhouſe and garden, within the ſpace of three months from the date of ſuch ſentence of depoſition, the Sheriff of the ſhire, or Stewart of the ſtewarty, upon having an extract, or certified copy of the ſentence of depoſition by the Preſbytery, laid before him, ſhall forthwith grant letters of ejection againſt ſuch ſchoolmaſter; of which no bill of ſuſpenſion or advocation nor action of reduction ſhall be competent; and in caſe of ſuch depoſition, the ſchool ſhall immediately be declared vacant, and the election of another ſchoolmaſter ſhall take place.*'

Why ſchoolmaſters ſhould be deprived of the right of appeal, is a problem difficult to be ſolved. That it ſhortens buſineſs, is unqueſtionably true; but, by a parity of argument, an extenſion of the principle to every cauſe that comes before the civil and eccleſiaſtical courts, would be equally uſeful. The Church of Scotland has never laid claim to the gift of infallibility; and it is the height of incongruity to ſuppoſe, that her ſecond loweſt court is fallible in caſes of the moſt trifling deſcription, and infallible in thoſe which affect the character and fortune of certain people, unfortunately conſidered in a leſs reſpectable light than what their general merits and uſefulneſs to ſociety warrants them to be regarded. I am, Sir, yours, &c. URBANUS.

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On the Malt Tax, with a Propoſal for aſcertaining the Relative Qualities of the Barleys of England and Scotland.*

SIR,

IT was but the other day I got your Magazine of May laſt. Upon the ſubject of an equal malt duty upon grain the produce of Scotland as of England, I have heard and read ſome ſenſe, and much nonſenſe; but the one who ſeems to underſtand the matter moſt thoroughly, is your Correſpondent N. beginning in page 224. And the experiment he mentions in page 226, to have been tried in the year 1787, upon equal quantities of Norfolk and beſt Scots barley, the latter being 3 lib. per boll heavier than the other, would be perfectly deciſive of the queſtion, had your Correſpondent thought proper to have the fact authenticated with the names of the perſons who made that experiment. Without that, it is no more than the bare aſſertion of an anonymous author; ſo cannot be attended to in Parliament. It is too late for this ſeſſion: But as the news-papers tell us, a hint was given, that, upon evidence being produced of the juſtice of our Scots claim, to a large diminution of that tax, ſo ruinous to our agriculture, redreſs would be given; it ſurely were well worth while, early after next harveſt, to apply to the Commiſſioners of Exciſe, Barons of Exchequer, or other public office, to appoint a maltſter, diſtiller, and brewer, men in whom the Commiſſioners, &c. have confidence, to repeat the experiment of 1787; and ſhould the reſult be the ſame, or nearly ſo, get it atteſted by the Court that authorized it, and a printed copy ſent, under a blank cover, to each member of Parliament in London. I need not add, that this ſhould be done as early in next ſeſſion as poſſible, that the affair may be taken up without delay; and our farmers have timeous warning to lay out their land for barley, or give up the ſowing of it altogether; as I apprehend they muſt, if no relief, or but a trifling one, is granted on malting. By the general name of barley, I mean every ſpecies of grain that is commonly uſed for malting; for the growth of real barley, I am convinced, is attempted in few places in Scotland; and in fewer can it be cultivated with advantage. What is generally held out as barley, is a mixture of it and bear, which our climate and ſoil are more adapted to; and in the part where I live, the farmers have almoſt univerſally taken to it, though it muſt be a bad crop, as the different grains are ripe at different times, and cannot ſpring equally in malting: in proof of which, I have obſerved ſeveral fields, where, a fortnight ago, a tolerably thick crop of bear was ſhot; and, this day, going round

round them, ſee the thickneſs nearly doubled, by the barley being now ſhot alſo. This is the caſe in a diſtrict generally held to be one of the moſt fertile in Scotland after Eaſt-Lothian and the Carſes, lying between the ſea and the ſpot where, I believe, your Publiſher firſt ſaw the light. Many of the beſt farmers ſpeak of returning to the old bear alone.

I have not time at preſent to ſay more, but may perhaps, when at leiſure, give you ſome ſtrictures on the friendly diſpute between Sir John Sinclair and Mr. Dempſter. Meantime, I am

Your very humble ſervant,

*July* 12. Y. X.

NOTE BY THE CONDUCTOR.

The ſcheme for aſcertaining the relative qualities of Scotiſh barley with thoſe of England, pointed out by our Correſpondent, ſeems to be a fair and deciſive one; though we apprehend, from the earlineſs of the harveſt this ſeaſon, that the reſult would not procure the juſtice for this country, which a general inveſtigation, in ordinary years, would enſure. If he will be ſo good as ſend his addreſs to the Publiſher, a particular account of the trial made in 1787 ſhall be forwarded; we not being at liberty to mention, in a public manner, the name of the gentleman who gave us the communication, though perfectly ſatisfied with its authenticity. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Remarks on the Review of Peebles Survey.*

SIR,

I am, on the whole, well pleaſed with the review of Peebles ſurvey; but in one point I think the Reviewer is incorrect. It is where he animadverts on Mr Findlater's obſervation, that the knowledge of the food of plants ought to be the foundation of the whole practice of agriculture. In this, I apprehend Mr Findlater is right; and the Reviewer perhaps wanders, when he ſays, that as we have not the command of fire, air, or water, little benefit would be gained by that knowledge.

Fire, air and water, are eſſential for ſupporting the exiſtence of animals as well as vegetables; but as each diſtinct tribe of animals has a peculiar food, beſides thoſe neceſſary for its ſubſiſtence, ſo, it is probable from analogy, that every diſtinct ſpecies of vegetables has a proper food beſides what is common to all. Earth and dung are very vague words in the ears of the chemiſt; as indefinite as animal and vegetable food. A particular ſort of food is neceſſary for

for giving any animal all the energy it is capable of. A man, for inſtance, may live on vegetables alone. He might even live, but he could not thrive, on graſs and other vegetables that would fatten a cow. So, for inſtance, it is probable, a plant of barley may live on what would be prejudicial to wheat. The one may flouriſh on oils, the other on ſalts.

Hence it would doubtleſs be deſirable to know what is the food of plants. It would amend in a thouſand particulars the practice of agriculture; and one of the firſt advantages that might be expected to reſult from it, would be the ſaving of the one half of the ſeed now profuſely thrown into the ground.

The neweſt theory relative to the food of plants is, that it is the gaſes or airs, different kinds of which may be extricated in more or leſs quantities from particular ſubſtances, and applied to their nouriſhment: although, from ſome trials, I am not inclined to adopt that theory. NOVICE JUNIOR.

NOTE BY THE CONDUCTOR.

We are happy to give all praiſe to the ingenuity of our worthy Correſpondent, but do not think he has ſaid any thing which can affect the opinion given by our Reviewer, as we are ſtill left completely in the dark reſpecting the food of plants. In the courſe of an extenſive practice, upon almoſt every kind of ſoil, we have never diſcovered any kind of manure which benefited one kind of grain, and proved prejudicial to another. We ſubſtitute manure for the food of plants; being decidedly of opinion, that he who can accumulate the greateſt quantity thereof, will, under a parity of circumſtances, always raiſe the largeſt crops. On the food of plants, ſpeculative inquirers may amuſe themſelves, by ingenious diſquiſitions: but the true practical agriculturiſt, who has *term time* in view, will narow his inveſtigations; and reſt ſatisfied, that good tillage, liberal manuring, and ſufficient drainage, will in every caſe enſure ſucceſs, unleſs phyſical circumſtances obſtruct the operation of theſe neceſſary agents. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*A Law recommended for Regulating Drainage.*

SIR,

WHILE paſſing ſome days in a highly cultivated county lately, I was ſorry to ſee conſiderable tracts of good land loſt to the proprietors and the public, for want of draining, which might be effected at a ſmall expence.

Upon

Upon inquiring into the cauſe, I was informed, that it had long been the wiſh of ſome of the proprietors and tenants; but that the main drain which behoved to be deepened, was a march ditch involving ſeveral intereſts; and though all would derive very conſiderable benefit, it had hitherto been impoſſible to get the parties to agree.

This is a ſerious evil; and I ſhould think might be obviated, without much difficulty, by an act ſomewhat ſimilar to that reſpecting fences. I ſhould however propoſe, that all diſputes of this kind ſhould be ſettled by arbiters, mutually choſen by the parties, if they can agree; if not, then the Sheriff of the county to name them; which arbiters ſhould have full power to award each perſon's ſhare of the expence, &c. &c.; and alſo, that their deciſion ſhould be final, without the power of appeal by any of the parties.

I am of opinion that it would alſo be an improvement upon the Act for regulating March Fences, were diſputes left to arbiters as above.

No man can have a greater reſpect for the Sheriff courts than I have; but it muſt be allowed, that the generality of gentlemen filling the office of Sheriff, though well verſed in law, have but an indifferent knowledge of country matters.

If you think the ſubject of the above hints worthy of notice, I will be extremely happy to ſee your remarks on them.

Yours, &c.

AN OBSERVER.

18. *June*, 1803.

NOTE BY THE CONDUCTOR.

We perfectly concur with our Correſpondent in thinking, that a law is much wanted for regulating drainage; becauſe, under the circumſtances condeſcended upon, it is impracticable for an individual, however well inclined, to drain the lands in his poſſeſſion, unleſs conterminous poſſeſſors can be obliged to join in the previous operations.

From our intimate knowledge with the diſtrict alluded to, we can ſafely declare, that the hints offered above are well founded; and we truſt the ſubject will be noticed more largely on an after occaſion. We have only to add, that the future correſpondence of the '*Obſerver*' will be highly acceptable.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Thoughts on the Import and Export of Grain, and on the high Duties on Diſtillation.*

SIR,

ON examining the accounts of exports and imports of grain preſented to the Houſe of Commons, as publiſhed in the 2d vol. p. 327. of your Magazine, it appears that, during the firſt 50 years, the exports exceeded the imports, to the very large amount of 29 256,573 quarters of grain of different ſorts; and that in the laſt 48 years, ſay from 1751 to 1799, the imports exceeded the exports by 13,674,979 quarters. If we add what has been imported during theſe laſt four years, I think you will find the imports of grain little ſhort of 20,000,000. You will obſerve, theſe imports conſiſted of wheat, oats, rye, and peas; while there was a ſurplus of 3,738,300 quarters of barley, exported in that time; from which it appears, we have a large ſurplus of barley, annually, more than is conſumed at home. This ſhould be generally known, in order that farmers may learn the real cauſe of the frequent, and particularly of the preſent depreſſion of that article; that they may provide againſt it, as far as lies in their power, when the nature of the ſoil, and engagements with their landlords will admit, to raiſe more wheat and oats in its place. Indeed, from theſe accounts it appears, that from the year 1790 to 1799, we imported a little barley; but it is to be remembered, that, in that time, the duties on the diſtilleries were very ſmall, in compariſon to what they now are; which, together with the high duty on malt, muſt make barley every ſeaſon a moſt unſaleable article, ſo long as the preſent ſyſtem continues; and while it does, it muſt be as heavy a preſſure on agricultural improvements, as the tithe ſyſtem in England is, which you ſo juſtly reprobate. The Government are ſo fully occupied in watching and guarding againſt the deſigns of an inveterate enemy, that they have little time to beſtow on agricultural improvements; which, after all, I think ſhould be the firſt object of every government, eſpecially after what was felt in 1800 and 1801. But if the landed intereſt have any influence on the Legiſlature, I would think it might naturally occur to them, that laying a duty on the diſtilleries nearly equal to a prohibition, muſt tend to depreſs their tenantry, while it holds forth a premium to the farmer abroad; and the ſmuggler, who ſupplies the country as regularly with gin, that pays no duty, as our home diſtiller could, if he were not under ſuch reſtrictions. No doubt, when ſpirits were low-priced, the people made a bad uſe of them; but at that time, trade was proſperous, wages high, and

and a political phrenzy in their minds. The very oppoſite is now the caſe. Spirits are ſtill conſumed, but in more moderation; and as they are become an eſſential article of conſumption, better ſupply them with Britiſh than with foreign. Mr PITT was aware the people in this country had a ſtrong propenſity for gambling; and he turned this to a great national account, from which he and his ſucceſſor draw about 300,000l. annually. Should this ſame police lead government to gratify the public with Britiſh ſpirits, and to drive the ſmuggler from the coaſt, there is little doubt but there would be above 1,000,000 quarters more barley conſumed in that article, and above a million ſterling of more revenues raiſed than at preſent, which the country loſes. It would alſo give ſuch a ſpur to agriculture, as would likely be the means of raiſing ſuch ſupplies of all other ſorts of grain, as might in time prevent us from depending for a part of our bread-corn on foreign countries. As it appears from your 2d vol. page 135-6, that not one half of the land in Britain, fit for cultivation, is under the plough; it muſt be owing to the want of internal encouragement, that we at any time ſtand in need of foreign ſupplies; having ample means within ourſelves, not only for ſubſiſtence but even for exportation to other countries, if our reſources were brought into action. I hope your Publication, being conducted on liberal principles, will be attended to by thoſe who have power to remove the obſtacles to improvements; and that, in place of being dependent upon other nations for corn, we may in time have a ſurplus to part with, which is the earneſt wiſh of

A FORFARSHIRE FARMER.

*P. S.*—Should the above meet with your approbation, I mean to propoſe, hereafter, a mode for the conſumpt of barley, ſimple in its nature, but beneficial to the landed intereſt and the community at large.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Letter from Dr Hunter, York.*

SIR,

THE incloſed is intended as a paper in the 5th or 6th vol. of the Georgical Eſſays; and if it ſuits your Magazine, it is at your ſervice in the November Number, which will be ſome months before my publication. I find many papers of mine inſerted in an Agricultural Magazine, publiſhed in London; and theſe papers not being mentioned *as extracts from the Georgical Eſſays*, have the appearance of making me a ſupporting correſpondent of that Work,

Work, which I really am not. I never ſhall communicate with any periodical work, yours excepted, and perhaps with the Annals. Let me hear from you ſoon. Have you ſeen Dr Harriſon's theory of the rot, in Mr Young's laſt number? I by no means coincide with him in opinion. The diſeaſe moſt certainly proceeds from an organized animal bred in marſhes. It is commonly called a *fluke*, from its reſemblance in ſhape to a flounder, or rather a ſole. It is found in all the biliary ducts, and nowhere elſe. I have a paper on the ſubject. Some circumſtances regarding the rot are curious. I ſee no way how to make a medicine to operate upon thoſe flukes, in conſequence of their having taken ſo ſingular a ſituation. The foot rot is alſo an obſcure diſeaſe; when inveterate, it eats away the very hoof.

I am, yours, &c. A. HUNTER.

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## *On the Smut in Wheat.*

OF the ſmut there ſeems to be two kinds; the one comes out a little earlier than the other, but both ſpring from the ſame root, and have the ſmut formed in what I call the *uterus*, or *folium vaginans*, ſome time before the ear makes its appearance. The one that is the moſt early, comes out naked, the whole of its chaff being quite deſtroyed; ſo that the duſt is moſtly carried off by the wind before the crop is harveſted. This kind is conſidered as the leaſt deſtructive of the two, as what of the duſt remains, may be removed when ſpread upon the thraſhing floor. But I am not quite certain, whether the wind may not be the means of conveying it to ſound ears, at that time haſtening to maturity in the ſame field. The other kind of ſmut does not deſtroy the chaff; ſo that the ear puts on a healthy appearance. The ſmut is contained in round bags compoſed of a dark green cuticle, which, when broken, diſcharge the black powder. This is more dangerous than the other, as the ſmutty ears cannot be diſtinguiſhed from ſuch as are ſound, even when placed upon the thraſhing floor. The ſmut is evidently a minute vegetable body, of the order of *fungi*, and may frequently be conſidered as a paraſitical plant; but how it comes, at ſo early a period, to take poſſeſſion of the infant germ, is a matter hitherto unknown. It is moſt certain, that when this black powder is rubbed upon ſound grain, that the produce will be in general ſmutty. I have ſometimes found ſound ears to ariſe from an infected root; and I have ſeen, though but ſeldom, ſound and ſmutty grains in the ſame ear. The whole of this part of natural hiſtory, is wrapt up in obſcurity; but it is a ſingular happineſs, that the negative principle of ſmut may be deſtroyed by certain ſteeps, well-known

to

to the farmer. These seem to operate in a twofold capacity, by destroying the germination of the smut, and by allowing the farmer to skim it off during the time of brining. When stale urine and lime are alone used, it is plain that the cultivator has no view beyond the destruction of the vegetative principle of the smut; a practice recommended by many judicious farmers, in *preference* to brining and steeping.

*York, Aug.* 26. 1803.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

I observe some satisfactory remarks in your last (page 350), relative to the Income or Property tax, so far as it affects the possessors of land in Scotland; and judge that additional light may be thrown on that important question, by publishing the following Memorial from fifteen respectable East-Lothian *farmers*, presented to the *Right Honourable Henry Dundas*, (LORD MELVILLE), when the first act for levying a tax upon income was under consideration of Parliament. I do but justice to that Honourable Person, when I state, that the application was received with marked attention; and that a polite answer was instantly transmitted to the Memorialists. I may also add, that it was generally believed, the relief then granted, proceeded entirely from the exertions of Lord Melville; to whom Scotland is undoubtedly under more numerous obligations, than to any Minister who has guided her internal concerns, since the Union of the two kingdoms. I am, yours, &c.

A FRIEND TO MERIT.

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Unto the Right Honourable HENRY DUNDAS, one of His Majesty's Principal Secretaries of State,

*The* MEMORIAL *and* REPRESENTATION *of several Farmers in the County of East Lothian, in behalf of themselves, and other Occupiers of Land, in that part of Great Britain called Scotland.*

*Humbly Sheweth,*

THAT the Memorialists observe, from the votes of the House of Commons, that a bill for imposing a tax upon income, is now before that Honourable House; which, if they are rightly informed, will operate with peculiar hardship upon all farmers of land; and more particularly, upon those residing in this part of the United Kingdom, where improvements are generally in their infancy, and rents payable in a different manner than what is commonly practised in England.

Your

Your Memorialiſts have no objection againſt the tax, provided it is levied upon them in the ſame proportion as upon other claſſes of the community; but, with ſubmiſſion, they apprehend that the mode propoſed for aſcertaining their incomes will be fallacious and unjuſt, if, as they are informed, the reſpective ſums payable by them to their landlords in name of rent, is to be taken as the criterion. In former times, when rents were low, this rule, with ſome juſtice, might have been adopted; but from the late great riſe of rents, the increaſed value of labour, and the comparative low prices of produce, their incomes cannot fairly be eſtimated at more than one fifth of the rental; and upon a number of farms ſet within theſe few years, if that eſtimate was taken, it would even be overrated.

The Memorialiſts beg leave to ſuggeſt another circumſtance which renders every reference to rent improper for aſcertaining the income of the poſſeſſor; which is, that ſome farms, from fertility of ſoil, local advantages, &c. are naturally capable of paying a much greater ſhare of produce by way of rent to the proprietors, than others not ſo favourably ſituated, although the incomes of the poſſeſſors, in both caſes, may be equal. Some farms have been ſet, where the landlord may be conſidered as receiving one half of the produce raiſed upon them; whereas in others, where the ſoil is not ſo fertile, and greater outlay required, the proprietor cannot receive one fifth. The tenants upon theſe different farms would therefore, according to the propoſed mode, be rated towards this tax upon different *ratios*, as their incomes are not in proportion to the ſums payable to their reſpective landlords.

Another objection occurring to your Memorialiſts is, that the occupiers of land lately ſet, will be far heavier taxed than thoſe who poſſeſs leaſes of a more ancient date. The latter will, in few caſes, pay more than ten *per cent.* upon income, while the former would generally be aſſeſſed to the extent of twenty, thirty, forty, and even fifty *per cent.* of the *real* profits. This difference muſt unavoidably take place, if rents are to be aſſumed as a criterion for aſcertaining income.

But what ſtrikes your Memorialiſts as a peculiar objection to this mode, and which they have no doubt will engage your marked attention, is, that farmers in Scotland will generally be rated a great deal higher than their brethren in England. In Scotland, all rents, in the firſt inſtance, are received by the landlord, who pays every public burthen, a few trifling articles excepted; whereas, in England, the *nominal* rent does not, in moſt caſes, exceed one half of what may be called the *real* rent,

as all parochial and parliamentary taxes are payable by the tenantry. This difference of ſyſtem would neceſſarily occaſion the farmers in the different countries to be rated upon different principles, even ſuppoſing their incomes to be exactly the ſame, and would introduce a moſt invidious diſtinction.

Your Memorialiſts beg leave to repeat, that they have no objections againſt the tax upon income, providing their incomes are to be aſcertained in the ſame manner as thoſe of other people, that is to ſay, by their abilities to pay the tax; otherwiſe it would aſſume a different form than a tax upon their incomes. They believe it will be much eaſier to aſcertain the *real* income of the farmer, whoſe concerns are all winded up within the year, than thoſe of the merchant and manufacturer; and they, with ſubmiſſion, claim that their proportion of the tax ſhould be aſcertained in the ſame way as the incomes of every other claſs. They preſume, that the real principle of the act now before the Houſe is, that every man ſhall pay one tenth of his income towards the ſupport of Government: Therefore, in making this claim, they requeſt no exemption.

Your Memorialiſts truſt you will take this buſineſs under ſerious conſideration; and, from your known attention to the public welfare, that they will, through your interpoſition, experience that relief in the premiſes which juſtice requires.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

EPICURUS, *in Reply to the* BREEDER *of* COALHEAVERS' MUTTON, *and* F.'s *Obſervations on Houſe Lamb; with Remarks on the proper mode of aſcertaining the real value of the New-Leiceſters, by a comparative Trial with the other Breeds of Sheep in the Iſland.*

SIR,

IT has given me pleaſure to obſerve, that the ſtricture which I made on the paragraph inſerted in the Edinburgh newſpapers, holding up Mr Brodie as the perſon who firſt introduced the feeding of houſe lamb into Scotland, and to whom the butcher markets of the city of Edinburgh have often ſtood indebted, has been the means of introducing into your uſeful Work a diſcuſſion concerning the various ſpecies of Sheep *at preſent reared in Britain.*

I hope the champions of the different breeds will come forward, and argue the merits of their particular favourites: For

I perfectly agree with your respectable correspondent Mr Dempster, that it is the sparks from the collision of argument in a free inquiry, that must light up the torch of truth, by which mankind only can explore their way to the tree of knowledge; a plant of heavenly growth, that must strike root, and grow out of facts, and must be trimmed and trained up by experience alone, before it can perfect its fruit, but not by the speculative opinions, even of the most learned and eminent men, *as is evident from the history of the progressive improvement of the human mind; for whilst mankind continued to fill the world with disputes on the speculative opinions of Plato, or of Aristotle, and other great men, they made but poor progress in the discovery of useful knowledge, only becoming adepts in the war of words, and slaves to superstition; till the immortal Bacon arose, who taught mankind to make experiments, and argue from facts.* By recording, therefore, facts in agriculture, and bringing them before the public, that they may be tried by the test of opinion, your periodical Publication is well adapted for promoting the improvement of Agriculture. I, however, have my doubts, if the marks of approbation or dislike which you make, as Conductor, upon sundry of the papers inserted in the Magazine, will not have the effect to retard this improvement; for numbers of your readers will form their own opinion from yours, without inquiring into the matter; the greatest bar to the progress of knowledge, being that propensity in the generality of mankind to pin their faith to this or that great man's opinion, name, or authority, rather than be at the trouble of inquiring into the merits of the cause themselves: and in this, they very much resemble the sheep we are treating of; for when a leader, more bold than the rest, runs in a particular direction, all the rest follow at his tail, without reflection. On the other hand, the vain will be disgusted, if you take no notice of their performances; whilst others, from timidity, will keep back their information on important subjects, when they observe your sentiments differ from their own: And I actually know this to be the case with a farmer who has made comparative trials of the value of horses and oxen in labouring his farm, and gives the preference to oxen; but will not communicate his observations; because he says that you are always at exercise, with your sword ready drawn, and is afraid lest you wound him to the quick with the sharp nib of your critical pen.

This train of thinking always entered my mind upon perusing the notes which you, as Conductor, attached to various papers published in the Farmer's Magazine; and shall therefore proceed to make some observations on your Remarks on the

Modern Improvement of Farm Stock, and those that were inserted in answer to it, as belonging more particularly to myself.

You say, No. XIII. p. 37, that 'I have certainly considered only one side of the question, and even that, not in a true farming point of view;' adding, 'that they (the Leicester sheep) are not so agreeable to the Epicure's palate, we concede, though we by no means allow, this to be the criterion which should determine the merits of the matter.' I conceive the merits of the matter and question to be, Whether or not the butcher markets of the city of Edinburgh have stood indebted to Mr Brodie for introducing house-lamb and large mutton, so as to have his name obtruded upon the public as a benefactor to his country? I do not think the well-supplied markets of Edinburgh could ever stand indebted to any individual, for the quantity brought to market, so as to have his name inserted in the newspapers, like those illustrious donors who send a cart-load of coals, or a fat sheep, to warm and feed the poor prisoners, in the city jail, at Christmas. If, therefore, you consider the scope and intention of my remarks, you must allow that I have not considered the subject I was treating about improperly. What had Epicurus to do with profit and loss, or a true farming point of view? he occupied no such ground; therefore your observations were not at all in point.

In your remarks, No. XIV. p. 168, you state, '*That* the New-Leicester, or improved breed of sheep, are more profitable to the farmer, in general cases, than many other breeds, *may almost be received as an axiom.*' But I beg leave again to refer you to your remarks in the 9th page of No. XIII. wherein you say, 'We do not assume the privilege of conveying information in a didactic manner.' In my opinion, however, the information given above is extremely dogmatical; for where are the self-evident facts, on which you found this axiom? Why have you not conveyed to us the proofs on a matter of such general utility, in order that they may be examined with scrutinizing eyes, before they are sanctioned by public opinion, and received as the foundation of your axiom, which is a proposition certainly not evident at first sight? You know the difficulty of drawing conclusions from experiments or practices in agriculture; and are we to adopt as axioms, the assertions of interested persons? In saying this, I disclaim all personality, and only wish to shoot at folly as it flies; for mankind every day deceive themselves: and when an improver in agriculture mounts his hobby, and brings him to market, he naturally thinks no price equivalent for so valuable an animal: But the purchaser must be credulous in the extreme, who, without a long and proper trial, attaches to all the parts of

of this moſt wonderful animal the fanciful properties which the ſeller ſo anxiouſly points out to him, in order to make him part with his money the more freely. To put this argument in a ſtronger point of view, I beg leave to ſtate the following fact.—The agriculturiſts in France are at preſent extremely anxious to improve the breed of ſheep; and, in order to produce long wool in that country, ſimilar to the long wool in England, theſe improvers have wiſely found out, that allowing the wool to remain two or three years on the backs of their ſheep, makes it grow two or three times its ordinary length: And they ſay farther, that they have tried the experiment with the greateſt ſucceſs, and that it produces wool, longer and finer than the wool of England, without doing the ſheep the ſmalleſt injury. And this doctrine is now taught in all the ſcientific ſchools in France, and is followed by all the patriotic improvers of farm ſtock in that country. It will not, however, be ſoon received as an axiom in Britain; and ſhows the abſurdity of placing implicit faith in the hobbies of improvers, before they are tried by the teſt of experience.

I ſhall now proceed to make ſome remarks on the papers in your laſt Number (XIV.), which were intended as anſwers to my obſervations on the modern improvement of farm ſtock; and ſhall begin with the breeder of coalheavers' mutton, as by far the moſt reſpectable. 1. It is not at all ſurpriſing that this gentleman ſhould reſpect thoſe who poſſeſs ſpirit and enterpriſe to give large prices for ewes and tups, by way of introducing a moſt valuable breed into Scotland. This is very natural, as it encourages the trade, and keeps up the extravagant prices of the article. He has taken great pains to tell us, that Mr Brodie has been a moſt ſucceſsful farmer; *ergo*, others ſhould follow his example, and give eighty guineas for the hire of a ram, in order to better their fortunes. I eſteem Mr Brodie's enterpriſing ſpirit, as well as the Breeder of coalheavers' mutton; but ſee no reaſon, on that account, why the public ought not to be undeceived, when an attempt is made to impoſe upon them. That he was the firſt perſon who introduced houſe-lamb into the Edinburgh market, is an idea abandoned; as to his mutton, the butchers univerſally ſay, we do not like the New-Leiceſters ſo well as the black-faced breed, becauſe they do not give ſatisfaction to our cuſtomers. No matter. 'Mr Brodie will benefit himſelf ſtill more by introducing this breed of ſheep, which is perhaps much wanted in Scotland. Now, if a man deſerves well of his country who raiſes two blades of graſs, or two ears of corn, where one grew before, is he not alſo deſerving of praiſe who produces two pounds of mutton, where only one was formerly produced?' Moſt undoubtedly. But where

are the proofs of this? For, in this particular, I will not credit the assertions of even Messr. Bakewell, Cullie, or Brodie; because they cannot be considered as impartial judges. But allowing the Leicester sheep to be a valuable breed, I flatly deny that Mr Brodie has the merit of introducing them into Scotland: nor will I mention him amongst those illustrious names, the Duke of Buccleugh, the late Earl of Hopetoun, and other noblemen, who brought Mr Bakewell's sheep into this country. And I have only to step over the boundary of his farm, at Upper Keith, into the fields of his nearest neighbour, to particularise Mr Brown of Johnstonburn, and his friend the late Mr Hepburn of Clerkington, who went on purpose to visit Mr Bakewell at Dishley, and purchased rams and ewes of his most approven breed; as also, if my memory serves me, stallions and brood mares, young bulls and cows: all of which they introduced into Scotland many years before Mr Brodie stocked his farm at second hand, or gave the high prices for the rams and ewes of the New-Leicester breed, so much vaunted of. But before that the superiority of this breed over all others is received as an axiom, many and repeated trials ought to be made, in various soils and situations, at different heights, from the shores of the ocean, to the summits of the mountains. I cheerfully admit, that these are a valuable breed of sheep, in situations where they are constantly supplied with a full bite of the richest food; and only contend, that their merits have never yet been properly ascertained, and are probably much overrated by their breeders.

But in order that the merits of the different competitors may be justly appreciated by well authenticated facts, let a field, or fields, of an equal quality of soil, be divided by a railing, and each of the divisions *stocked up* about August, one with the New-Leicesters, the other with the black-faced breed; two chosen little flocks picked out by their respective breeders, in the same condition, as to age, fat, &c.; let each of the flocks be accurately weighed, when they are put into the enclosure; and if turnips are deemed necessary for supporting the New-Leicesters through the winter, let the black-faced be served with an equal quantity. Next summer, when the lambs are fit for yeaning, let the ewes and lambs of each breed be again weighed: the ewes being then withdrawn, the lambs are to continue, and ought to be weighed again at the end of the season, before they are put to turnip; again, when they are put into their respective enclosures, when clipped; and at the end of the season, they may be slaughtered, and the weight and value of their quarters, wool, tallow, offals, and quality of their flesh, will all be accurately ascertained; or if it is judged necessary, the experiment may be continued in this

manner,

manner, till the ſheep are two, three, or four years old. Similar trials ought alſo to be made with the Leiceſters and Cheviot breed, Ryeland and South-down, not forgetting the Caithneſs and Zetland, in various ſituations, from the moſt ſheltered, to the coldeſt expoſures: and after repeated trials, it would then be known, if the New-Leiceſters are the moſt proper and profitable kind of ſheep, for conſuming the ſheep paſtures of England and Scotland, or within what range of ſoil and climate they ought to be reared; for I cannot at preſent admit, that they alone are the favourites of nature, and that the particular forms and qualities which ſhe has given to the different breeds of every animal, as well as ſheep, to ſuit their local ſituations, were not given for wiſe and uſeful purpoſes. It is obvious, that in making this experiment, it would not be a fair trial, to bring the black-faced or Cheviot breed, directly from the mountains, and confine them to paſture in the enclofure: it is as impoſſible that ſuch ſheep could thrive as well there as the new Leiceſters, as to ſuppoſe, that this laſt would thrive as well, if carried to the mountains, as the native breeds of theſe regions. The mountain ſheep in the enclofure, would be in the ſituation of a wild buck in a cage; they would neglect their paſture, and pant after liberty on their native mountains; for ſuch is the effects of habit, that even man, with all his ſuperior intellectual powers, cannot reſiſt, and muſt bend to its force. Whilſt, on the other hand, the New-Leiceſter, crammed like a ſtuffed turkey by the hand of man from the day it was dropped, and brought up in the lap of plenty; if left to ſhift for itſelf upon the mountains, it would die for want of energy to procure food; a virtue, the offspring of neceſſity, which can only be reared, and brought to perfection, by rigid diſcipline, in the ſchool of adverſity. In order, therefore, that the comparative trial of the different breeds may be fair, the two kinds compared, ſhould always be bred in the ſame paſture, and inured to the ſame food and habits of life, as mentioned above. I know from experience, that black-faced lambs or hogs brought from the mountains, do not thrive ſo well in an enclofure, particularly upon turnips, as the white-faced or Engliſh breed; the former like every other wild animal, being conſtantly in motion, and endeavouring to eſcape; whilſt the more judicious amuſement which the Engliſh ſheep took was, like honeſt John Bull, quietly to fill their bellies. But this was only the effect of early habits; for the Engliſh lambs, gorged from the day of their birth with the readieſt food, had been taught by their dams to eat the turnip, and had lain at their eaſe when their mothers fed, or paſtured around them; whilſt the mountain lambs, every day ſince they were dropped, had been conſtantly in the practice of ranging about with

theirs, in queſt of a ſcanty and precarious ſuſtenance. From an imperfect experiment I made this ſeaſon, I am the more inclined to call in queſtion the ſuperior excellence of the New-Leiceſter, or large Engliſh ſheep, over the black-faced, or other ſmaller ones. On the 14th of May laſt, I weighed ſix white-faced or Engliſh hogs, of a cross betwixt the new-Leiceſter and Cheviot breed, purchaſed laſt year at St Boſwell's fair, and ſix black-faced hogs, from the mountains in Perthſhire, purchaſed ſome weeks after; the ſix Engliſh hogs weighed 42 ſt. Edinburgh fleſh weight, or 6 cwt. 2 qrs. 2 lib. avoirdupois; the ſix black-faced 34 ſt. 15 lib. fleſh weight, or 4 cwt. 1 qr. 9 lib. avoirdupois. On their being weighed again, on the 31ſt of June, the Engliſh hogs weighed 50 ſt. 7 lib.; increaſe 8 ſt. 7 lib. or 1 cwt. 1 qr. 7 lib. over live weight: The black-faced 44 ſt. 6 lib.; increaſe 9 ſt. 7 lib. or 1 cwt. 1 qr. 24 lib.; difference in favour of the black-faced hogs, 1 ſt. or 17½ lib avoirdupois. From the above ſtatement, it appears, that the balance was in favour of the black-faced mountain ſheep, even under unfavourable circumſtances, as they had not forgot their wandering habit of life. I do not mean, however, to hold out this experiment as by any means concluſive, having neither been begun in time, nor carried to the proper length, for forming a correct opinion; but it muſt raiſe doubts in an inquiring mind, if the pretended great ſuperiority of the New-Leiceſter, or other large breeds, over the ſmaller ones, in producing mutton, has any foundation in truth, to ſanction the extravagant prices demanded for them; but that truth is only to be come at, by many and repeated comparative trials, which I warmly recommend to be made by diſintereſted perſons, in various ſituations; the reſult of which, I wiſh to ſee from time to time inſerted in your Magazine. It is ſaid, that the New-Leiceſters come to perfection at an earlier age than the other breeds; but ſome of the black-faced ſheep above mentioned, that were rejected by the butcher in the month of July, on account of the ſmalneſs of their ſize, have been killed this month (September) for family uſe, and contained of tallow (kidney fat included) 11 lib. Dutch, being exactly the weight of the quarter.

The delicacy of butcher meat and other animal food, principally depends on the fineneſs of the muſcular fibre, and this again, on the ſmalneſs of the animal; whether black or white-faced, Scotch or Engliſh; and will always be in proportion to the bone, and *natural* ſize of the animal; otherwiſe, it would be an incongruous offspring of nature, and not in the fitteſt ſtate for ſupporting its exiſtence. Particular individuals may differ from this rule; but every breed, or claſs of animals, will be found to agree with it in general. The delicacy of the fleſh, combined with the ſmallneſs of the bone and fineneſs of the muſcular fibre, is eminently conſpicuous in the fleſh of a ſmall Highland ſtot, when compared with

with that of a large Engliſh ox. Travelling or exerciſe can never improve the fleſh of any of the domeſticated animals, but muſt make it worſe, by increaſing the ſtrength of the muſcular fibre: hence the fleſh of wild animals is always tough, hard, and dry; and the fleſh of the domeſticated animals will always be found the moſt delicate eating, when they are fattened on the richeſt paſtures, where they lye at their eaſe, as Milton deſcribes the cattle in paradiſe,

——— 'On the graſs
Couch'd, and now filled with paſture gazing fat.'

It may alſo be added, that the fleſh of the female of every animal is more delicate eating than that of the male, their muſcular fibres not being ſo ſtrong, even as the male when caſtrated at an early period; and on that account, they are alſo eaſier fattened. The popular predilection for wedder mutton, ſeems therefore, amongſt many others, to be a popular error.

I have no predilection for black-faced ſheep, otherwiſe than on account of their ſmall ſize; and prefer ſmall animals of any breed, not only on account of their being more delicate eating, but becauſe I think they are fattened at leſs expence, that is to ſay, that they will increaſe more in weight, in proportion to the food they eat, than the larger animal: And my reaſons for thinking ſo are, *1ſt*, That the fine and leſs tenſe fibres of the ſmall animal more eaſily expand, and allow the internal veſicles interſperſed through the fleſh, to be filled with fat, and other animal juices, in the proceſs of feeding, which renders it more marbled, juicy, and delicate eating, than that of larger animals; the muſcular fibres of thoſe being more rigid, reſiſt, in a greater degree, the entry of the fat and juices into the internal veſicles, which, added to the ſtrength of the fibre, occaſions the large animal to be more difficult to feed, and its fleſh coarſer, and leſs juicy and palatable, than that of ſmall ones: *2dly*, The greateſt increaſe of weight in the proceſs of fattening, is laid on upon the ſurface. Now it is obvious, to mathematical demonſtration, and conſequently may, with ſome propriety, be received as an axiom, that the ſurface of ſmall animals is much larger, in proportion to their weight or ſize, than the ſurface of large ones. Therefore, for both theſe reaſons, the fitneſs of the ſmall animal to fatten and increaſe in weight, is much greater than in the large one; and if that is the caſe, the additional weight will be laid upon the ſmall animal, with leſs expenditure of food. I frankly however confeſs, that this opinion is in a great meaſure founded upon theory, having never proved it by facts myſelf; but I think it has been ſupported, in many inſtances, from the aſtoniſhing increaſe of weight to which ſmall Highland cattle have frequently been brought. I believe it has been proved, by pretty accurate experiments,

experiments, that cattle eat in proportion to their weight; at leaſt I knew an inſtance of it ſeveral years ago, when two large oxen, equal in weight in the quarters to four ſmall ones, ate regularly the ſame weight of turnips and hay whilſt feeding.

I have been told, by a farmer who frequents Morpeth market, that in that great emporium, he can ſell ſheep, of the weight of 15 lib. per quarter, at one penny per pound dearer than he can ſheep of 25 lib. per quarter. If this is a fact, does it not account for the butchers in Newcaſtle, Mancheſter, Leeds, Sheffield, Birmingham, &c. &c. &c. ſelling two quarters of the New Leiceſters for one of the black-faced? The reaſon is obvious; they cannot give the coalheavers, keelmen, pitmen, miners, and fabricators, ſo good a pennyworth of the one as of the other, ſeeing they purchaſe them ſo much dearer themſelves. The caſe is exactly ſimilar in Dalkeith market. The fact, therefore, which the maſter in the buſineſs of ſheep-breeding has brought forward in ſupport of his arguments, militates againſt them, and the concluſion he draws; and I have not a doubt, but that, in the progreſs of luxury, every perſon, from Cornwall ſouthward, to Caithneſs northward, will in time learn to deſpiſe the large, coarſe, oleaginous mutton, and give a decided preference to the delicate fleſh of the ſmaller ones.

The breeder of coalheavers' mutton informs us, that, 'when hungry from the plough, he has often dipped toaſted bread into the drippings of his delicious mutton, and then ate the bread with pleaſure and avidity.' What will not people do when they are hungry! I have heard of them eating the ſoles off their ſhoes; and I can tell him, that the Ruſſian ſailors, when in this country, uſed often to climb the lamp-poſts, and dip their bread into the rancid train oil of the lamp, and then eat the bread with pleaſure and avidity. Ben Johnſon, the poet, uſed to remark, that his wit and genius were improven by good wine; and obſerved, that he always produced his beſt dramatic ſcenes whenever a but of ſack of the beſt quality was tapped. I am however afraid, that the ſop in the pan has been too heavy for the breeder of coalheaver mutton's ſtomach, and has hurt his reaſoning faculties; learned doctors telling us, that all diſorders in the head proceed from the ſtomach; for I cannot account for the paragraph which immediately follows, on any other principle. He ſays—'Epicurus muſt allow me to put him right alſo in one other article: *Mr Brodie never did feed what was known by the name of houſe lamb.*' What is the meaning of this? Was the writer labouring under the effects of the ſop in the pan, or has he never read the remarks on the modern improvement of farm ſtock, any more than he did the paragraph which gave riſe to it, which was expreſsly

expreſsly written to undeceive the public, by ſhowing that Mr Brodie never did feed what is called houſe lamb, and even that none ſuch were ever fed in Scotland for ſale, but in one year? Did I not expreſsly ſay, that Mr Brodie, ſome time ago, bred *early lamb* for ſupplying the Edinburgh market? How, therefore, can he put me right on a point which I had expreſsly admitted? He further adds, '*that Mr Brodie, by ſome means beſt known to himſelf, had the addreſs* to make the ewes of this very breed take the tup at a very early ſeaſon, ſo as to bring the earlieſt lambs to the Edinburgh market, of any perſon in that vicinity at that period; and I have been informed, that he ſold theſe lambs, to the amount of a hundred, at twenty ſhillings, or one guinea each. Now, Epicurus talks of theſe lambs of Mr Brodie's weighing only 2½ or 3 lib. per quarter,' &c. I muſt here inform him, that the purchaſers of early lamb in the Edinburgh market are ladies and gentlemen, who enjoy, in that elegant city, their *otium cum dignitate*—or lawyers, who do not require a ſop in the pan to refreſh them after hard labour. They herefore prefer delicate early lamb, of a ſmall ſize, which is ſerved up cold at ſupper; and on that account, it is believed, I will be found pretty correct with reſpect to the ſize of Mr Brodie's early lamb. But if any doubt remains with him, let him conſult the Edinburgh butchers, who will inform him as to the weight and fat of Mr Brodie's early lamb, when compared with what is now brought to market from other places. Your correſpondent judges it was motives of prudence that made Mr Brodie give up the rearing of early lamb. I am of the ſame opinion. Probably his farm of Upper Keith, although of a dry ſoil and warm expoſure, is ſituated at too great a diſtance from the ſea, for raiſing a bellyful of rich paſture graſs, always ſo neceſſary for the New-Leiceſters, particularly when fattening their lamb.

Mr Brodie, according to your correſpondent's account, '*by ſome means beſt known to himſelf, had the addreſs* of making his ſheep, which are ſometimes tardy at procreating, take the tup at a very early ſeaſon. This is a moſt important diſcovery: why does he conceal his light under a buſhel, or hide his talents in a napkin? If Mr Brodie does not chuſe that his country ſhould ſtand indebted to him for a free diſcovery of this valuable ſecret, let him boldly go to the Houſe of Commons, and demand a *bonus* for his ſecret, out of the public purſe. It is certainly of ten times more value than Elkington's mode of draining; and he will undoubtedly be ſupported in his demand by a formidable band of patriots, on both ſides of the Houſe, who now ſhew their regard for their country, by reforming farm ſtock. A reſpectable author on agri-

culture

culture informs us, that when the good women in the Highlands want to make their cows take the bull, they lead them out to crop a certain herb called bulling-graſs, which has the effect of making them take the bull immediately. Perhaps this rare graſs has been diſcovered upon the farm of Upper Keith; and, if ſo, it is to be hoped that ſome of it will be brought to market, for the good of the public. As to what the maſter in ſheep-breeding ſays, reſpecting the wool of the Leiceſter breed being more valuable than the Ryeland, the fineſt in the iſland; I will by no means diſpute the point, becauſe I am not a competent judge of the matter; only I muſt add, that what he advances on that head, is by no means ſatisfactory, at leaſt to me. He ſays, *that, formerly*, many of the breeders of the long, or heavy-wooled Lincolnſhire breed, clipped twelve pounds per fleece over their whole flock, which they ſold for 1s. per lib., or 12s. per fleece; whereas the Ryeland only averages 3 lib., which ſells at 3s., or 9s. per fleece. From which he leaves the reader to infer, that it is more profitable rearing long, than ſhort wool. But the fallacy of this argument will appear evident, when it is known, that he is comparing the largeſt breed of ſheep in England (and even that not the New-Leiceſters, whoſe merits he is defending), with the ſmalleſt, perhaps not half the weight of the large Lincolnſhire breed; and if ſheep eat in proportion to their weight, which is highly probable, the fine ſhort-woolled kind will have a decided preference; as an acre of ſheep paſture will then produce more money, in ſhort, than long wool; the only criterion by which a juſt compariſon can be drawn.

We are alſo informed, that the New-Leiceſters are creeping *ſlowly* up the hills of Scotland. I know, by actual experience, from the great quantity of fat they carry on their backs, that they will creep ſlowly, indeed, up hill; and I ſhrewdly ſuſpect, that in their progreſs upwards, or at leaſt before they are domeſticated in theſe regions, they will leave their outward coat of fat behind them, together with the tallow in their bellies, the pride and boaſt of their breeder. Before I have done with this gentleman, I muſt add, that in the outſet of his paper, he undertook to prove, that the New-Leiceſter breed, producing two pounds of mutton, where one was produced before, was much wanted in Scotland; and that much praiſe was due to Mr Brodie, for introducing that valuable breed into this country. But I have ſhewn, that in place of proofs, he has only brought aſſertions, without a ſingle fact to ſupport them; and that however valuable this breed may be, *Mr Brodie at Upper Keith was not the perſon who introduced it into Scotland.*

Before I conclude, I beg leave to ſay a few words to your correſpondent F. E.; whoſe arguments are ſo obſcure, being delivered

delivered in a sort of parables, that I confess I do not understand them. What does he mean by this apothegm? 'A certain author wrote a book, and after much trouble and expence in the publishing it, he could find nobody that would buy it,' &c. What is all this to the question at issue? to me it is inexplicable. As to being unfortunate in the choice of hog mutton, I never asserted that it was good eating. I only adduced the fact, to shew, that young sheep, of other breeds than the New-Leicesters, if well fed, would die as well as they: nor did I ever dispute, but that there was much pleasure to be procured under a blanket or a petticoat; I only insist, that the wool of the New-Leicesters, of which these articles are made, is not near so fine or valuable as the short clothing wool, which sells for more money; and, from the present state of Europe, must every day become more and more valuable; and renders the extension and improvement of the short-woolled sheep absolutely necessary for preserving the woollen manufacture of England. Your correspondent is so dull, ignorant, or affected, that he does not know my motive for writing the observations on the modern improvement of farm stock. I must therefore tell him, that it was to detect the fraud, and expose the folly of the person, who inserted the absurd paragraph in the Edinburgh newspapers, holding up Mr Brodie to the public eye as an object of praise and admiration, for benefiting the Edinburgh markets with his house lamb and coarse mutton, when, in fact, he did not deserve it; but this your correspondent attributes to the envy of a little mind. I may surely here safely apply to him the precept of the great master in morals: '*Why beholdest thou the mote that is in thy brother's eye, but considerest not the beam that is in thine own eye? for with what judgment ye judge, ye shall be judged, and with what measure ye mete, it shall be measured to you again.*' I shall therefore be bold to tell him, that the envy of a little mind proceeds from vanity, the offspring of ignorance, combined with affectation, of which he has pled guilty. Of this, nothing can be more striking, than from my having had occasion to mention a name, for the purpose of substantiating a fact, and his laying hold of this circumstance, to hold up Mr Brodie as a man of fortune, who has arisen to opulence; and, in so doing, he has been odious enough to draw comparisons betwixt them, and has even made the other suffer (in his opinion), because he is not so rich as Mr Brodie. If this is not the effect of vanity, fermenting on the dregs of a little, sordid, groveling mind, I do not know what it is. I must therefore look upon him as the officious friend of Mr Brodie, who inserted the paragraph in the Edinburgh newspapers, probably without his knowledge or consent; and certainly that gentleman was very

very little obliged to him for his officious interference in this buſineſs. There was certainly no occaſion for obtruding him upon the public. His actual merit, as a ſpirited farmer, is well eſtabliſhed, and for which he ſhall always be juſtly appreciated by Yours, &c.

EPICURUS.

NOTE BY THE CONDUCTOR.

Reſpect for our old friend *Epicurus*, with whom we have been long connected, engages us to preſent the above paper *verbatim*, in ſo far as our management is implicated. Perhaps ſome of his remarks might have been ſpared; but, being made, a juſtificatory plea is neceſſary. We are not afraid of the diſcuſſion, though aware it can afford little pleaſure on either ſide. On that account, we ſhall be conciſe.

The practice adopted by us, of occaſionally offering remarks on the communications of correſpondents, was early recommended by a reſpectable friend, as being the alone beſt method of maintaining the congruity of the work. Beſides, it occurred, that the diſtance betwixt each publication, rendered remarks particularly neceſſary, in the firſt inſtance, otherwiſe the ſubject might, in a great meaſure, be forgotten before the ſucceeding Number was publiſhed. In making remarks, we are juſtified by the *Muſeum Ruſticum*, an agricultural work, publiſhed in London about thirty-ſeven years ago, and even by the practice of many cotemporary editors. But why ſhould we appeal to any authority at all, ſeeing that the ſtrongeſt ſupport may be drawn from the very paper before us. Our worthy correſpondent quotes a paſſage from Mr Dempſter's letter, which is much to our mind; and here we reſt our juſtification. If the ſparks from the colliſion of argument light up the torch of truth, and lead the inquirer to the tree of knowledge, then every additional remark or argument that is made muſt tend to promote theſe ends. The remarks in queſtion have procured three or four additional pages from Epicurus; and had the one been avoided, it is more than probable that the information communicated in the other would have been loſt to the public.

Having noticed our correſpondent's exordium, the criticiſms offered by him call next for our attention. Whether he is a fair critic, and whether he confounds one part of a diſpute with another altogether unconnected with the former, we are not bound to ſay. He is keen, and perhaps, in ſome inſtances, ſteps beyond his object. In his eagerneſs to procure good mutton and good cloth, he perhaps forgets that none of theſe are great objects to the farmer who muſt keep term-time. Such muſt conſider whether

whether this breed or that breed of sheep will pay him best for a given quantity of food, and not which will yield the greatest relish to his palate, or the softest clothing to his back.

Epicurus's first letter seemed to embrace two objects: 1st, To detect the fallacy of the paragraph inserted in the Edinburgh newspapers; and, 2dly, To depretiate the New-Leicester, or, what is commonly called the improved breed of sheep. In our remarks upon that letter, we virtually joined him in his first object, at least so far as respected the matter of house lamb; and, with respect to the second, *i. e.* the merit or value of the New-Leicester breed of sheep, we remarked, that he had not considered the subject in a true point of view, that is to say, his arguments were solely directed to the quality of their flesh, not to the profit and loss arising from the breed. This is the sum and substance of the dispute, so far as we interfered; and let any impartial person examine his paper, and the attendant remarks, and say, whether the latter are not strictly applicable. If the paper had been confined to the paragraph in the newspapers, Epicurus would have been perfectly right, when he says that he had nothing to do with profit and loss; but the remark made by us applied to another part, in which profit and loss was materially concerned.

Whether the compliment we paid to the author of the letter signed '*A Breeder of Coalheavers' Mutton*,' be just or not, we must leave to be determined by those who are acquainted with the merits of that respectable gentleman. This, however, and the remark which followed, *viz.* that it might almost be received as an axiom, that, in general cases, the New-Leicester, or improved breed of sheep, are more profitable to the farmer than many other breeds, forms the effence of his second criticism. We are therein accused of acting didactically, dogmatically, and, in short, of giving opinions altogether unsupported by proof. We did not know before, that giving a simple opinion was acting didactically, and are yet to learn, that didactic and dogmatic are synonymous terms. But be these things as they may, we must be allowed to think, that the rapid spread of the New-Leicester over a great part of the island, is a strong proof of their intrinsic and superior quality as feeders. We do not say that the extension of the breed warrants us to lay down as an axiom, that they are the best breed; but it certainly justifies the opinion given, that, in general cases, they will prove more profitable to the farmer than many others. Does Epicurus mean to maintain, that every animal feeds or fattens in direct proportion to the food it consumes? If he does, we might use the *argumentum ad hominem* in return, were we not averse to making an application.

With regard to the mode of ascertaining the value of different breeds, we can have no objection to what is suggested by Epicurus,

rus, and are of opinion, that few people are better qualified to conduct such trials than himself. Local circumstances, with him, are favourable to such comparative investigations, and we are satisfied with his accuracy. Besides, he should remember, that the *onus probandi* lies upon his shoulders, and not upon the gentlemen who have defended the New-Leicester, or improved breed of sheep.

If Epicurus's friend, who has made a comparative trial of oxen and horses in farm labour, will favour the public with the result of his experiments, through the channel of our Magazine, we promise, that he shall pass the ordeal without a touch from our sword, though we will not engage for our correspondents. Why need the gentleman be afraid? If the comparative trial is accurate; if it is fairly detailed; and if his conclusions are justly drawn, he may safely come forward; and we may add, that if he annexes his name, the communication cannot fail to have weight with an impartial public. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*An Answer to Observations on Tithes, No. XIII. p. 61—76.*

SIR,

IN your 13th Number, *A Friend to Improvements* observes, that 'you did right in giving a place' to a paper of mine on tithes, in the preceding one, 'as it served to display the weakness of the cause.' I thank you for that indulgence, and venture to presume on a repetition of the favour, even though your compliance should afford him additional matter for exposing the weakness of my arguments. You happened, however, to give my observations an improper title. Instead of *defending* tithes, I allowed the exaction of them to be unfavourable to improvements in agriculture, to be often vexatious and oppressive to occupiers of land, and attended with odium, trouble, and loss, to the exactors. Thus far the gentleman and I agree; and, consequently, we must agree concerning the propriety of getting rid of them in a fair and equitable way, if such a way can be found.

Two points, chiefly, are at issue between us—the nature of the right by which tithes are held, and the extent of the evil arising from them. To these two, all other subjects of difference in our opinion are reducible.

He seems to consider tithes, not as a real estate, but as a tax upon an estate, which, like all other taxes, may be commuted at the pleasure of the Legislature, when the public good requires it, with

with or without the conſent of the holders: whereas, I look upon them to be a ſacred, unalienable right, held by the ſame, or at leaſt as ſtrong a tenure, as the lands out of which they are drawn, and liable to be affected by any act of the Legiſlature, juſt as land is affected, and no farther. The Britiſh conſtitution can no more authoriſe all the tithes to be ſold or commuted than it can authoriſe all the land in the kingdom to be ſold or commuted *. For the ſoundneſs of this doctrine, I refer your correſpondent to any lawyer of reputation in the ſiſter kingdoms.

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* It was in illuſtrating this part of the ſubject, that I introduced *pleaſure grounds* and *bad farming*. Your correſpondent aſks, 'What analogy is there between theſe matters and tithes?' With ſubmiſſion to him, there is an evident and ſtriking 'analogy between theſe matters' and the argument they were intended to elucidate. For if the reaſon for aboliſhing or commuting tithes be, that the proſperity of agriculture requires it; then, for the ſame reaſon, pleaſure grounds ought to be occaſionally in tillage, and bad farmers turned out of their poſſeſſions—not 'compelled to be good ones;' language neither uſed by me, nor to be fairly inferred from any thing I advanced. I humbly apprehend, that this meaſure, ſubjecting pleaſure grounds, and land improperly managed, to a regular rotation of crops, according to the acknowledged rules of good huſbandry, would be of more eſſential ſervice to the intereſt of agriculture, than getting free from tithes. And I alſo apprehend, (though here I ſpeak under correction), that a Britiſh Parliament can, by its inherent power, enforce the former without conſulting thoſe concerned, but cannot touch the latter. I ſhould indeed be heartily ſorry to ſee this inherent power enforcing ſuch an arbitrary meaſure; for I agree with your correſpondent in thinking, that every gentleman is entitled to manage his pleaſure ground, and every tenant his farm, in the manner that appears moſt profitable, or even moſt agreeable, to themſelves; and that both are ſufficiently puniſhed in being diſappointed of their expected object. But the queſtion ſtill recurs—Why ſhould tithe-holders be under a compulſion, for the ſake of agriculture, from which others are exempted, in a caſe where agriculture is equally concerned? I do not urge the tillage of pleaſure grounds, or the ejection of bad farmers; I only contend, that theſe are more eaſily effected than the commutation of tithes, and fully as beneficial to agriculture; and that, from regard to conſiſtency, the advocates for the one ſhould be equally zealous for the other.

*N. B.*—It may be proper to mention here, that, ſince the above was written (with a view of being inſerted in No. 14.), a new opponent has ariſen in that Number, under the ſignature of W., to whoſe long reaſoning about *right*, what is ſaid in the text, and in this note, may be conſidered as a ſufficient anſwer. I would beg of that gentleman

The inſtances which he produces, of legal interference with private property, are not quite to the purpoſe. It is well known, that tithes in North Britain were not commuted; nor are they, ſtrictly ſpeaking, commuted at this day. At the Reformation, they were wreſted from the Church, or rather tacitly given up by her in the phrenzy of fanaticiſm. By the Crown, who thus got hold of them, they were profuſely beſtowed on people of influence, reſumed and alienated a ſecond time, with liberty to proprietors of land to bring them to a valuation and ſale, under the burden of providing for the reformed clergy. Theſe uſurpations, grants, and regulations of the Crown, were afterwards ratified by Parliament. But the proceedings, both of the King and Parliament, bear evident marks of having been influenced by the turbulent ſpirit of the times. And, ſurely, a meaſure originating in the uſurpation of the Prince, and carried on by his arbitrary deciſion, though afterwards adopted by Parliament, cannot be recommended as a precedent for the abolition of tithes in South Britain, in the preſent ſettled ſtate of government, when property of every kind is clearly defined and protected by law. The juriſdiction act is rather more in point; yet it only took away privileges, incompatible with the order and ſafety of the community, with the profeſſed or implied conſent of ſome poſſeſſors, though under a violent oppoſition from others; part of whom certainly were actuated by the principle of family pride to retain hereditary honours, while the other, and perhaps the greater

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not to carry me farther back than I go myſelf, and that is only to the law of England, as it has been for ages, and is now, reſpecting tithes. By that law, they are held and conveyed juſt as eſtates are. The *charter*, *title-deed*, or whatever name it legally obtains, which gives the proprietor a right to the lands, contains the titular's right to the tithes. If, in any inſtance, lands are held by preſcriptive, not by written rights, ſo are the tythes drawn from them, whether by laymen or clergy. And where two properties belong to two individuals or bodies by the ſame common right, there is equal injuſtice in compelling a ſale or commutation of the leſſer as of the greater. When he aſks—'what right the Church has to be ſubſiſted by the landed intereſt alone?' he forgets that the queſtion relates to tithes, not to the ſubſiſtence of the Church, and would not be in the leaſt affected though none of them went to ſubſiſt her members. With regard to the Iriſh union, I apprehend it was accompliſhed agreeably to the wiſhes of a vaſt majority, in both kingdoms, of thoſe who had a legal intereſt in it; and ſo will tithes be commuted, when a majority of thoſe intereſted in the commutation ſhall agree upon it. At leaſt, I have always underſtood, that all acts of the Legiſlature, interfering with private property, were paſſed with the conſent, often upon the application, of a majority of the people concerned.

greater part, had nothing else in view, but to enhance the price of what found policy required them to relinquish. With regard to the taxes on tea and coals, converted into one on windows and another on spirits, all canal, road, and harbour bills, they proceed upon the undeniable principle, that subjects must surrender *part* of their property for the security and improvement of the remainder, and that the Legislature is the competent judge of the part to be thus surrendered. But the commutation of tithes would be a surrender, not of a *part*, but of the *whole* of a property, so valuable, as to amount, according to your correspondent, to one sixteenth of the rental of the country, and to much more *, according to my conjecture. Now, supposing tithes to be *property* in his sense of the word, as annuities and wages are, or as any lucrative tax is, and subject, like them, to be modified and altered by the Legislature, would he not think it rather an unprecedented and unconstitutional stretch of power in a British Parliament, to enforce an exchange, even of such property, to the extent of three millions yearly, without previously obtaining the consent of the parties interested? However much we may differ on other points, I flatter myself, that neither he, nor any lover of his country, would advise such an important measure to be pushed forward, contrary to the wishes of either the purchasers or the sellers. He surely must be sensible, that not merely their concurrence, but their cordial co-operation, is necessary to carry it into effect; and that remonstrances from all the farmers and grand juries in the kingdom, would not be listened to, till they unite in an application, and fix upon the general outlines of the commutation. Of all this he seems himself to be abundantly aware, as far as one can judge from the plan which he suggests and illustrates. Are we then agreed concerning the necessity of prevailing with tithe-holders and land-holders, not to consent passively to a commutation, but to enter zealously into an amicable adjustment of the terms on which it should take place? This is the radical principle for which I con-

 tend.

* Supposing 48 millions, as he computes, to be the annual rental of England, and one fourth part of the land to be *tithe-free*, or nearly so; by paying only a very small modus, the remaining three fourths would yield 36 millions of rent, one fifth of which, according to the principle of valuing tithes in Scotland, amounting to more than seven millions, would be the tithe; but, on account of the circumstances which he and I have mentioned, deductions should be allowed to reduce it to one eighth, or 4½ millions. The gentleman may be right as to the real value of tithes actually drawn; but, in commuting them, a fair estimate must be made of their probable amount, as the basis of the commutation.

tend. Nor does your correſpondent diſpute it, though he does not lay ſo much ſtreſs upon it as it deſerves.

There is no material difference in our opinions concerning the means of perſuading theſe parties to a cordial agreement on the ſubject. For I have the ſatisfaction to perceive, that, while he ſneers at me for laying it down as a maxim, 'that all men of good ſenſe are guided by worldly intereſt,' (and that maxim I certainly maintain with reſpect to all temporal concerns), he appeals himſelf to this very principle in ſupport of his plan, and recommends it as beneficial to the public, to landholders, to tytheholders, and farmers. I am happy that he virtually ſubſcribes to my creed; and am confident, that, ſo far (and ſo far only) as his plan and his arguments are calculated to work on theſe deſcriptions of men, he may be inſtrumental in accompliſhing the deſired change. On the reſt of the public, his reaſoning and his eloquence are abſolutely thrown away. Not that theſe are unable to underſtand them and be convinced, but that their conviction can neither convince thoſe concerned in the ſale and purchaſe of tithes, nor compel them to ſell and buy without conviction. Here it is, that thoſe formidable obſtacles lye in the way, which I am accuſed of *ſtarting*. I mentioned ſome circumſtances, which naturally diſpoſe the one party to ſet too high, and the other too low, a value on tithes, and which could only be done away by farmers coming forward with ſuch liberal offers of additional rent, as would enable the landholders to ſatisfy the titheholders, and to put ſomething in their own pockets. This difficulty is increaſed in proportion as waſte lands and old paſtures can be rendered productive by tillage. Were titheholders to bear a ſhare of the expence incurred in ſuch improvements; to avoid it, they might take leſs for their tithes. But being liable to no ſuch expence, and yet entitled to a proportion of the produce ariſing from that expence, they have a right to ſet a high price upon their tithes, and to ſay, 'If they be worth that price, pay it; and though they ſhould not be worth ſo much to you proprietors, yet if they be worth it to you and the public jointly, let each pay a part.' I would not commend their patriotiſm in acting thus. I ſpeak only of their *right*. And whereever men have a right, it muſt be made their intereſt to part with it. If they demand too much, nobody will purchaſe, though buyers will rather ſtretch a point for ſuch an important article as the tithes of their own lands. But if theſe cannot be bought ſo as to afford a reaſonable profit to landlords and farmers, improvements muſt either ſtop, or be carried on under the burden of their exaction. Your correſpondent cannot be ignorant, that, under this burden, large tracts have been ſubſtantially

tially improven, very much to the honour and emolument of farmers, and that other tracts, in favourable ſituations, admit of equal improvement under the ſame burden. At the ſame time, I frankly allow, that there are extenſive diſtricts, where the exaction would effectually preclude any attempt at melioration, or at leaſt render it extremely doubtful how far farmers of ſkill and enterpriſe ſhould venture upon them. Theſe facts, while repreſenting tithes as decidedly hoſtile to agriculture, ſhow how very difficult, if not impracticable, it is to fall upon a general rule for their commutation, which would apply, with equal fairneſs, to every caſe, and meet the ideas of all concerned. From the general ſtrain of his letter and his plan, your correſpondent is not inſenſible of this difficulty, though he ſeems not to ſee it in ſo ſtriking a point of view as I do

But there are other facts (eſpecially two very glaring ones, inſtanced in my former letter), which furniſh a ſtrong preſumption, that tithes, though an acknowledged grievance, are not a grievance of ſuch magnitude and extent as their enemies repreſent. One of theſe your correſpondent paſſes over in ſilence, though he gives me a piece of information concerning it, which ſtrengthens my inference: 'Lay-tithes, it is believed from good authority, extend to a fourth part of the Engliſh territory.' To the ſale or commutation of ſuch tithes, there is no legal obſtruction. Yet few of them have been bought or commuted. Whence has this happened? Why propoſe 'an act of the Legiſlature,' for the commutation of this 'obnoxious burden,' this 'pernicious and unpopular tax,' when one fourth part of it, which may be commuted without ſuch an act, remains in the hands of lay-impropriators? Till theſe ſimple queſtions are anſwered in a ſatisfactory manner; to warrant a contrary inference, I muſt continue to infer, as I have done, that lay-tithes, at leaſt, are not an *evil of great magnitude.* Yet he tells us, 'theſe are worſe than tithes paid to clergymen.' By his own account, the latter muſt be an *evil of ſtill leſs magnitude.* That neither the one kind, nor the other, are an evil of ſuch extenſive and deplorable magnitude, as to call for legal interpoſition, my ſecond fact (which he vainly tries to explain away) eſtabliſhes beyond a doubt. For, in that caſe, all parties concerned would have been *cordial and unanimous* in deſiring a commutation. The attempts hitherto made have been ſlight, and proceeded from one ſide. *Tithe-holders* have never ſtirred in the buſineſs. While they and the great maſs of the *oppreſſed tithe-payers* remain uninfluenced by the marked 'reprobation of ſeven eighths of thoſe gentlemen who were employed by the Board of Agriculture in ſurveying the kingdom,' muſt we not conclude, either that the evil is not ſore, or that the peo-

ple are so stupid and insensible, as not to feel it?* If their weighty authority did not inform and convince me, 'relative to the disagreeable situation of those placed under the tithing system,' in opposition to this incontrovertible fact, what information or conviction could he expect me to obtain from the 'letter of his friend in England?' Let me ask him, if he seriously believes the description there given to be generally applicable to every part of the kingdom where tithes are drawn? Does he believe that all, or most, or even many tithe-owners, act in such an oppressive manner? Does he believe that one tithe-owner out of 5, of 10, of 20, or even out of 100, act so? For my part, I must believe instances of such conduct to be extremely rare; because, were they either general or frequent, they would excite greater exertions to get rid of tithes than have hitherto appeared. If he looks upon them in the same light, he might have spared himself the trouble of inserting the letter; for it does not strengthen his cause; it only proves, what in all cases holds true, that there are exceptions to the general rule. If he can persuade himself that such instances are numerous, let him account for the feeble

* The prevalent use of horses, rather than oxen, in spite of plausible theories, is an apt illustration of this conclusion. Your correspondent himself allows that 'it carries a specious appearance.' It will be found to be as *solid* as it is specious, when fairly applied to the case at issue. Farmers do not use oxen, *because it is not for their interest.* Landlords do not purchase, or commute lay-tithes, *because it is not for their interest.* Landlords and farmers have hitherto entered into no concert, or shewn any vigorous desire to get church-tithes commuted, *because it is not for their interest.* Tithe-owners have hitherto taken no steps to get an equivalent for tithes, *because it is not for their interest.* I do not, however, push the argument to its full extent. I content myself with inferring, that though tithes be a grievance, they are a more tolerable one, than any plan hitherto proposed for getting free from them. The illustration will not be applied, by a fair reasoner, in any other sense; and I submit it to the candour of your correspondent, if his application be the natural and just one. With regard to 'the common sense of farmers,' I should be sorry if any thing, in my former or present letter, could be construed into an insinuation against it; and, as their tameness under the *vexatious* burden of tithes would be no proof of it, I infer from this tameness, that tithes are less vexatious than he is willing to allow. Mr W. indeed tells us, 'the disapprobation of the people at large against them is become so strong, that it must find utterance somewhere;' but he afterwards tells us, that, in all former instances, 'the eloquence of the clergy wrought on the sympathy of the people; and that the landed interest quickly gave up the cause.' A conclusive proof, that tithes have been, and are severely felt!

feeble impreſſion which they make upon the public mind, and the general torpor that prevails with regard to the commutation of tithes. Let him not ſhelter himſelf under the old adage, that 'what belongs to every body, belongs to nobody;' or plead that tenants only ſuffer, as an apology for landlords being negligent; or lay ſtreſs on mere reſolutions of Grand Juries, which ended in doing nothing. Did tenants, in general, ſuffer to one half the extent that he and his friend deſcribe, their ſufferings would force themſelves on the notice of proprietors and the public, and imperiouſly and ſucceſsfully call for redreſs.

This ſame letter muſt not be diſmiſſed, without further animadverſion. I cannot help regretting, that the writer has not ſpecified ſome particular facts, from which we might have known, with certainty, how far he or his neighbours have really been aggrieved by the vexatious conduct of tithe-holders, and what proportion of their grievances has ariſen from the laity and from the clergy: for information on theſe points ſeems abſolutely neceſſary, to aſcertain whether there be occaſion for legal interpoſition, or whether relief can be obtained without it. If oppreſſive exactions be few and partial (as I apprehend for the reaſons already aſſigned), individual ſufferers ſhould be left to make the beſt compoſition they can. If ſuch exactions be general, to whom are they to be imputed? Not ſurely to lay-impropriators: for landlords have it in their power to remove them, by purchaſing their tithes. If landlords will not employ this power, upon being ſuitably reimburſed, *they* are to blame. If tenants refuſe ſuch an additional rent, as will amount to a ſuitable reimburſement, *they* are to blame. Yet he tells us, 'the great tithes are generally in the hands of laymen;' and he enumerates 'corn' among the great tithes. Do laymen, then, prevent farmers from 'harveſting their corn, and depaſturing their fields in proper time?' And do landlords tamely ſubmit to a burden, from which they can be relieved on paying a fair compenſation? Or are tenants backward in urging their landlords to give the compenſation, and in offering ſomething more than an annual equivalent for the value of it? Will your correſpondent, or his Engliſh friend, who are ſo well acquainted with the ſubject, be ſo kind as to ſay where the blame lies? There may be inſtances, where family pride, perſonal pique, or political differences, prevent lay-impropriators from diſpoſing of tithes. But, in general, theſe conſiderations are eaſily overbalanced by ſelf-intereſt. To that powerful principle, the oppreſſed will very ſeldom apply in vain. Where they do not apply, I dare ſay it muſt be allowed, that there can be no harm in tithe-holders uſing a right, however unfriendly to agriculture, which the very perſons, moſt intereſted in the proſperity of agriculture, neglect, or decline to purchaſe.

As far as the clergy are implicated in his charge, this reaſoning will not apply. He ſeems to aſſert, not in a direct, but in an implied manner, that ſome of the greater, and moſt of the ſmaller tithes belong to them; and theſe cannot be commuted or purchaſed without an act of the Legiſlature. In a ſimilar manner, he ſeems to aſſert, that a deciſion, finding turnips titheable, except when eaten on the ground by ſheep paying tithe, has been inſiſted upon, 'on many occaſions,' with a rigour very injurious to the cultivators. With regard to lambs of an improved breed, he does not even *ſeem* to aſſert that they ever *were* demanded; he only inſinuates that they *may be* demanded in tithe. Let us, however, admit the charge in its full extent againſt the clergy. Let us admit, that, by their perverſeneſs, corn is injured, cattle are deprived of paſture, fields are kept back from being tilled and ſown; and that, through their greed, turnips and improved lambs are rigidly tithed, the queſtion ſtill recurs—is the practice univerſal? If it be, do not farmers calculate upon it when taking their farms, and offer leſs rent? And is not this circumſtance of itſelf ſufficient to rouſe proprietors to ſuch effectual meaſures, as ſhall inſure a legal commutation? For, in every caſe, the univerſality and preſſure of an evil is both the ſtrongeſt incitement, and the ſureſt prelude to a ſpeedy remedy. If, on the contrary, the practice be not univerſal, but confined to a few ſolitary inſtances, it is material to inquire, whether theſe be occaſioned by the avarice or ill-nature of the clergy; or by the artifices and fraudulent attempts of farmers to elude a fair and full payment; or, perhaps, partly by both theſe cauſes? This inquiry may be equally neceſſary with reſpect to oppreſſive exactions of tithes by laymen. Part of the blame will often be found imputable to farmers.—None of theſe conſiderations are taken into account by the letter-writer. He never ſuppoſes, that farmers draw down ſuch rigorous treatment on themſelves, or poſſeſs their farms ſo much cheaper for being ſubject to it. He never ſuppoſes, that tithe owners would willingly accept ſomething leſs than the fair value of their tithes, to be freed from the trouble and odium of receiving them in kind. He gives no hint that diſſenters are the chief ſufferers by the vexatious demands of the clergy, or, in the language of the clergy, are the moſt clamorous and troubleſome to deal with in the matter of tithes. Yet it is well known, and not foreign to the point, that the generality of them, with all their reſpectability and worth, are unfriendly to religious eſtabliſhments of any kind: they cannot be fond of paying tithes to ſupport what they diſlike: they are not, on that account, much in favour with the clergy: leſs indulgence is ſhown to them than to churchmen; and they are not likely to conceal or extenuate their wrongs. Setting aſide their complaints, not as groundleſs, but as the neceſſary

ceſſary effects, in ſome meaſure, of their own principles and conduct, the evils actually ariſing from the tithe ſyſtem will be reduced within a much narrower compaſs.

In caſe it ſhould be alleged, that though hardſhips be not ſuffered to any conſiderable extent from the preſent exaction of tithes, yet, as they may be ſeverely felt in a ſtate of higher agricultural improvement, and as the fear of their being thus felt prevents ſuch improvement, therefore the owners ſhould be compelled, by a poſitive law, to ſell or commute them for a reaſonable compenſation, I beg leave to add, that I am as ready as any of your readers or correſpondents, to adviſe and urge thoſe concerned to concert meaſures for obtaining ſuch a law; but that the *actual, ſore, and univerſal experience* of inconvenience and real miſchief ariſing from tithes will go farther to obtain it, than their own mere theoretical conviction of its neceſſity and utility, or the united opinions and ſolicitations of their fellow-citizens. More ſpeedy and vigorous meaſures are always taken to remove an evil that is *felt*, than one that is only *apprehended*.

I have now only to aſk pardon of you, and the public, for occupying ſo much of your Magazine, when it might have been more uſefully filled. Yet I am not conſcious, either in this, or my preceding paper, of introducing extraneous matter, or dwelling diffuſely on the topics illuſtrated. Nor am I conſcious of miſapprehending or miſtating the arguments of my opponents, or of treating them, in any reſpect, with unfairneſs or incivility. I am yet to learn that a cauſe can be ſerved by ſuch means, otherwiſe it were eaſy to employ them. I reſt my reaſoning on facts, either univerſally acknowledged, or furniſhed by your correſpondents themſelves. And I beg they will conſider, coolly and ſeriouſly, the contents of my former paper, their own animadverſions upon it, and the illuſtration of it now ſubmitted to their peruſal. Allow me to expreſs a wiſh, that ſhould they, or any other body, be inclined to offer any further remarks to the public on the ſubject, they will ſave themſelves the trouble of decrying tythes as inimical to agriculture, as that point is not diſputed, and confine themſelves to the atempt of overturning the facts on which I reaſon, or invalidating the arguments I deduce from them. I have no other deſire than to have my meaning clearly underſtood, my facts candidly inveſtigated, and my arguments narrowly, yet fairly ſifted. I am, &c. T. S.

*June, 27th.* 1803.

REMARKS ON THE ABOVE BY THE CONDUCTOR.

It appears to us that Mr T. S. has not underſtood the plan propoſed by the *Friend to Improvements* for regulating tithes, which

which removed, in a great measure, the objections urged by him and others against a commutation, or he would not have sent us the above answers. If the points at issue are, *the nature of the right by which tithes are held*, and *the extent of the evil arising from them*, we should suppose that the question is compressed within narrow bounds. If tithes are an evil (and Mr T. S. admits that they are), then the nature of the right is but a secondary object, because private right ought always to give place to public advantage. This is a principle fully recognised by our laws, and hath been acted upon in innumerable instances. We will not waste time in detailing proofs, as the dullest of our readers must be sufficiently acquainted with such legal interferences.

Supposing, for argument's sake, that lay-impropriators have as good a right to tithes, as landed proprietors have to their estates, it does not follow that the Legislature is precluded from changing the mode of payment, should they, in their wisdom, conceive such a measure to be necessary and expedient. Shall we remind Mr T. S. of the thirlage bill, which enacted a commutation analogous in every respect to the one under consideration? The thirlage bill provided full remuneration for the multures thereby commuted; and we are clear, that, in the event of such being made to titheholders, as proposed by the *Friend to Improvements*, no possible injury could be done to that body of men.

In our opinion, Mr T. S. does not advert to the ground upon which a commutation is solicited. It is not that the interest of individuals, either of one class or of another, might be benefited; but merely because, without some regulation of that nature, the agriculture of the country cannot be improved to the extent it is capable of. When he admitted that tithes were an evil, he in fact surrendered the fortress, so far as its defence rested upon his shoulders; for assuredly every evil ought to be removed, the moment it is discovered, in order that the opposite advantages may be enjoyed.

We are at a loss to discover what Mr T. S. means, when he declares (p. 447.), that landlords have it in their power to remove the exaction in kind, by purchasing their tithes. Does he mean to insinuate, that an exchange has been erected for the accommodation of sellers and purchasers, and that sales will be made the moment the *payer* is disposed to treat with the *holder?* Certainly not: but if something of this kind is not meant, then all his arguments and inferences on this head must go for nothing. So far from sales being optional, it will be found that lay-tithes are mostly in the possession of ancient families, whose estates are entailed; consequently, no measure, except an act of Parliament, is sufficient to procure the necessary relief.

Whether tithes are an evil of such magnitude as represented by

by their adverſaries, and whether they are exacted, in every caſe, with ſeverity, are queſtions of little moment, ſeeing that the ſyſtem itſelf fully warrants the ſtricteſt exaction. A recurrence to our law-reports will amply prove, that the adminiſtrators of juriſprudence ſupport every claim for tithe to the fulleſt extent. That an evil ſhould be tolerated, becauſe it does not univerſally prevail, and that tithes ſhould be continued, becauſe they are not uniformly collected with rigour, is a kind of logic with which we are utterly unacquainted.

Mr T. S. ſeems to argue, *that whatever is, is right;* or why infer that tithes are not a great evil, becauſe the public have not univerſally called out for a remedy? In other words, he thinks that the burden is tolerable, becauſe it is endured; and, *vice verſa*, that, if intolerable, it would not be endured. This reminds us of the ſtory of the Engliſh ſailor condemned to be hanged. Upon hearing his ſentence pronounced, he ſhowed no emotion, but merely turned his quid in his cheek. The Judge, wiſhing to awake him to a proper ſenſe of his condition, ſaid to him, Have you not heard, Sir, that you are to die very ſoon? Why, pleaſe your Honour, replied the ſailor, I know I muſt die ſome time; and a little ſooner or later makes very little difference. But have you conſidered, Sir, what is to become of you after death? Not much, an't pleaſe your Honour. It is poſſible, Sir, that you may go to hell. Well, your Honour, while one has a being, he muſt have ſome one birth or another. But in hell, Sir, you will be tormented, and your torments will endure for ever. For ever, ſay you? Why, then, if ſo be the caſe, it is certain I ſhall be able to bear them.

Mr T. S. alſo ſeems to conſider the interference of byſtanders, with their opinions, as a kind of *jus tertii* interference. We doubt, however, if any proper opinion, on any cauſe, was either ever formed or fairly given by the parties intereſted *hinc inde*. Were all ſpeculation debarred upon ſubjects of public utility, except in thoſe who have an immediate intereſt, we fear ſpeculation would be attended with little profit. N.

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FOR THE FARMER'S MAGAZINE.

*Comparative Average Value of different kinds of the beſt Corns, in the North of Germany, relatively to their ſpecific Weights and Contents of Spirits, when employed for Diſtillation. Communicated by Chevalier Edelcrantz of Stockholm, preſently in this country.*

| | *Weight.* | *Quantity of Spirits.* |
|---|---|---|
| Wheat, 1 buſhel - | 53 lib. - | 11 pints. |
| Rye, —— - | 50 - | 9 — |

Barley,

| | *Weight.* | *Quantity of Spirits.* |
|---|---|---|
| Barley, 1 buſhel - | 42 lib. | - 7 pints. |
| Malt, ——— - | 30 | - 6 — |
| Oats, ——— - | 28 | - $3\frac{1}{2}$ — |

The *buſhel* (himpte) is = 1631 French cubic inches.

The *pound* = 10,014 Dutch aſs, or 16 oz. 1 dr.

The *pint* (maaſs) = $62\frac{1}{2}$ French cubic inches.

The ſpecific gravity of the *ſpirits*, at 64° Fahrenh. therm. is = 0,930.

If we ought to determine the *prices* of different corns by their contents of ſpirits in given *meaſures*, of the weights above mentioned, their value neceſſarily would be as the numbers 11, 9, 7, 6, $3\frac{1}{2}$.* But if the *richneſs* of different corns is to be eſtimated by the quantity of ſpirits contained in the ſame *weight*, their real intrinſic value will be as the numbers 207, 180, 166, 200, 126.

The above table proves, that the ſaccharine matter or ſpirits contained in *different* corns, is not exactly in the proportion of their reſpective weights; but, in various ſorts of the *ſame* kind, experience has ſhown the ſpirits produced increaſe nearly in the ſame proportion as the weights.

The prices of different corns, however fluctuating, as in other countries, are, in general, in the north of Germany, proportional to their produce of ſpirits.

If the nouriſhing part or food contained in a vegetable is proportional to the ſaccharine matter or ſpirit produced, the *rye* ſeems, by this compariſon, to poſſeſs greater advantage over oats and barley than is commonly ſuppoſed.

An inhabitant of the northern counties is ſurpriſed to ſee the former plant not more cultivated in England and Scotland. That lands and ſoils which can produce wheat are not employed for rye, is very natural; but that oats and barley have the ſame right of excluding rye from all other ſoils, ſeems to indicate ſome ſtronger reaſon than the national prejudice againſt rye bread,† which is ſo prevalent in this country, as this plant ſucceeds very well upon almoſt all ſoils.‡ A.

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* This proportion is analogous to the ſtatement of Mr J. J. G. Weiſs, a German author, whoſe treatiſe on the diſtillation of corn is perhaps the beſt and the moſt practical yet publiſhed in any language.

† The ſame prejudice exiſts againſt oat bread in Sweden, and ſome other northern countries, where the pooreſt people can be compelled only by the greateſt neceſſity, in times of ſcarcity, to be fed with it.

‡ I ſaw, the paſt year, a very good crop of rye at the farm of the ingenious and learned Dr Thäer, at Zelle, near Hanover, on a very poor ſand. His field was managed in the moſt perfect ſtyle of the Norfolk drill huſbandry, and much ſuperior to the adjacent broadcaſt crops.

FOR THE FARMER'S MAGAZINE.

## LETTER XIII.

### *Strictures on Farm-Management near London.*

(Continued from p. 34. No. XIII.)

In the view, already given, of managing your land to the beſt advantage, I have not taken into conſideration the cultivation of ſaintfoin, or cinquefoil, for hay, or of red clover for ſeed. Theſe are crops with which I am almoſt totally unacquainted; and therefore it would have been preſumption in me to pretend giving any directions regarding them. In a large farm, or even in a ſmaller one that is divided into a convenient number of encloſures, ſufficient ſcope can readily be found for theſe, or for any other crops that may ſuit the ſoil and climate, or the ſituation of the huſbandman. Either of theſe laſt mentioned crops might be interpoſed on part of what has been appropriated for hay, in the foregoing ſcheme of rotation.

I have learnt, chiefly from Marſhall's writings, that ſaintfoin thrives almoſt excluſively on ſoils that have a deep calcareous, or limeſtone gravel bottom; on which ſoils it continues, for a conſiderable number of years, to give heavy crops of hay annually, without any manure whatever. From the ſame ſource of information, I underſtand that ſaintfoin will anſwer tolerably on dry-bottomed land that has been recently and fully manured with lime, chalk, or good marl. Following that idea, it is my intention ſoon to give it a trial on a ſmall field of about three acres, of good dry ſoil, which is to be fully limed in ſpring for a crop of barley. Along with the barley, I intend to ſow ſaintfoin, with a mixture of clover and rye-graſs. Should it not ſucceed, my field will in this caſe have a ſufficiency of the other herbage ſeeds for two years, which is my general plan. If it anſwers, I can then keep the field for hay as long as it ſeems profitable: And in that caſe, I ſhall introduce ſaintfoin as a permanent portion of my ſyſtem of huſbandry; and by that means ſhall be enabled to leſſen the tillage part of my farm, on the whole; and, conſequently, ſhall have a larger proportion of manure for the part which is in tillage.

When potatoes are cultivated in the field to any extent, they may occupy a part of what has been allotted for oats or beans in the foregoing ſcheme of rotation: But they ought never to be put in the place of a perfect fallow, as the potato culture cannot clean the ground, in any effectual degree, from root weeds. They muſt always be conſidered as an exhauſting crop, and conſequently the ſoil after them ought to be well manured. I do not, however, think your ſoil well adapted for the cultivation of potatoes; but

but ſo far as you may find it convenient to cultivate them, I would recommend the ground to be manured with long ſtrawey litter, in the bottom of the drills in which the potatoes are ſet, and not with your well-rotted dung or compoſt. The ſtraw will keep your ſtrong ſoil open, and will allow the potatoes to ſend out their runners on all ſides.

In the ſcheme of huſbandry which I have endeavoured to trace, I have omitted to mention tares or vetches. Theſe ought to be cultivated for the work-horſes, and may be grown on part of what is allotted for beans in the rotation I have pointed out. I would ſtrongly recommend theſe to be cultivated in drills; though I muſt acknowledge I have never yet followed that excellent practice myſelf, but mean to do ſo in future *. I underſtand there are two kinds cultivated in the ſouth; one of which is ſown before winter, and is uſed largely as ſpring feed for ſheep. With that ſpecies I am altogether unacquainted, and likewiſe with the expenditure of them on ſheep ſtock. The ſpecies called ſpring tares, which is ſown as early as poſſible in ſpring, is the only kind that I know any thing about, or that is in uſe, ſo far as I know, in this quarter of the country.

Rye is, as I underſtand, much cultivated in ſome parts ſo England, as an early feed for ſheep; but I am not at all converſant with the practice. But your ſoil is by no means fit for rye, which thrives but in dry ſandy ſoils.

Rape, likewiſe, is much cultivated in many parts of England, with the ſame intention, as an early ſpring feed for ſheep. That plant ſhould probably thrive with you; and it might be very beneficial to ſow it, immediately after harveſt, on the land which is intended next ſpring for beans, oats, or barley. In that caſe, it muſt be eaten off in proper time for working the land for either of theſe crops; and, by giving manure to the ſoil, would increaſe the produce of the ſubſequent crop conſiderably. I need hardly inſiſt againſt ſowing rape, with the above intention, on the land which is intended for fallow; as it would unqueſtionably interfere very much with the work neceſſary for rendering that proceſs an effectual cleaner of the ſoil, without which a fallow is a mere pretence, and does not deſerve the name.

Cabbages, cultivated in the field on a large ſcale, are, in many parts of England, found a moſt uſeful crop for feeding cattle during winter, and thereby producing a ſupply of manure for the farm. Theſe, too, would probably anſwer well on your ſoil, and may be placed in the room of beans, in the ſyſtem of rotation, but ſhould never be put inſtead of perfect fallow, and for the ſame reaſons already advanced with regard to potatoes. Not having

* This year (1800) it has been done with advantage.

ing any experience of cabbages as a farm crop, I have merely introduced them, by way of hint, without pretending to say any thing respecting their cultivation. As, however, they are raised in a seed bed, and afterwards planted out, the land can be considerably cleaned before planting, and, if free from couch, they might often stand in place of fallow, as they fully admit of destroying seed weeds, by hand-hoeing and ploughing the intervals. They might even admit of cross-ploughing the intervals, if set in regular rows, not in the quincunx order.

Turnips are a very material article of cultivation on light, dry-bottomed land; but as yours is not of that description, I have not taken this crop into consideration. I cannot, however, refrain from objecting very strongly against the mode of cultivating turnips, which I saw practised through a very great extent of my late journey. Sowing turnips broadcast, not only cannot give so good a crop, as when sown in regular drills with large intervals, but does not admit of their being cleaned so effectually. The plough can never be admitted on the land, after turnips are sown in the broadcast way; neither is it possible to set them out at such regular distances. On land fit for the purpose, turnips are a most valuable crop. They come in place of fallow, for which, when properly cultivated, they answer most effectually; and they both produce a profitable return, and fit the soil either for a subsequent crop of wheat or barley most excellently. Five and six guineas an acre are common prices for good turnips in this country; and this year, when they have very generally failed, eight and ten guineas are already bargained for.

There are two ways of expending the turnip crop practised in this country;—either drawn from the field they grow upon, and given to cattle or sheep in the house, the fold-yard, or another field; or folded on with sheep, as they grow on the ground. In the neighbourhood of large towns, they are sometimes sold off the ground altogether to cow-keepers. This mode deprives the farm of the manure they produce, and can only be justified by high prices, and in situations where manure can be purchased. I have known sixteen guineas an acre given in the neighbourhood of Edinburgh. And this season, I should consider good turnips as being worth twenty guineas in that situation.

I have known turnips raised to advantage, in land as strong as yours, by the following procedure. After giving the land as complete a fallow as possible, by making the various operations follow each other quickly, it is ridged up, by twice gathering, into fifteen or eighteen feet lands or ridges. Drills are then run across these ridges, at twenty-seven to thirty inch intervals: the manure is spread in the drills, the drills split open to cover it,

it, and the turnips ſown on the new drills. To have a good crop, the work ought to be completed from the beginning to the middle of June.

When the turnips have got four rough leaves, the intervals muſt be gathered up by the ſmall plough, to bury as many weeds as poſſible; or it muſt be ſtirred by the ſkimming plough or horſe-hoe, as directed for beans. After this, the turnips are thinned to ſingle plants, at about ten or twelve inches aſunder, and all the weeds deſtroyed by the hand-hoe. When a ſecond ſet of weeds come up, the ſkimmer and hand-hoe are uſed a ſecond time, and then the turnips are earthed up by the plough with two mould-boards.

During the progreſs of all theſe operations, eſpecial care muſt be taken to clear out all the water furrows in every part of the field, as each operation is apt to obſtruct them very much.

The greateſt objection to turnips in ſtrong ſoils, is the poaching, which is almoſt unavoidable, either in eating them on the ground by ſheep, or in carrying them off. The only way to avoid this, is, to carry them in panniers on horſeback; or they may be taken off in carts during froſt.

The next article which I have to notice is the lime huſbandry, and it is an important one; for the poſſeſſion of land conſtitutionally diſpoſed to receive benefit from a calcareous application, may ſafely be conſidered as a moſt deſireable affair to every good huſbandman; though in your caſe it is unneceſſary to enlarge upon its advantages.

Lime is one of the greateſt means of improvement in this country, and is uſed both on land newly broken up from a ſtate of nature, and on old tillage or graſs land; but, owing to the vaſt diſtance of lime from your property, I have not ventured to recommend it, even as an experiment on a ſmall ſcale. Beſides, from the great quantity of calcareous matter, or chalky or marly particles, contained in the *galt* or ſubſoil on your eſtate, it appears to me that all the improvement, deriveable from lime or marl, may be procured, with you, merely by ploughing a little deeper than ordinary, ſo as to turn up a part of the *galt*, and to mix it intimately with the ſoil.

This matter will need, however, to be managed with delicacy and caution; as it will require patient experiment, and ſome continuance of experience, to aſcertain, with certainty, whether the mixture of the *galt* with the cultivated ſoil is attended with advantage, and to what degree. For this purpoſe, I would recommend the eſſay to be made in the following manner.

In one of your fallow fields, let two or three ridges in the middle of the field be ploughed, before winter, a little deeper than the reſt, ſo as to turn an inch or more of the *galt* to the ſurface,

furface. Allow it to remain in this fituation all winter, to receive the mellowing influence of the froft, and other circumftances of the weather. The fucceeding operations of the fallow procefs, as already directed in thefe letters, will mix it intimately with the foil; and you will diftinctly fee and appreciate its effects on the fucceeding crops, by comparifon with thofe on the reft of the field. If advantageous, which I am rather inclined to think it will be, you can follow out the example, on a large fcale, in all fucceeding fallows. If the contrary, I need not fay you will avoid it in future. If the fallow is perfectly worked in every refpect, I fhould expect it to be of fingular utility; not otherwife. And I muft advife you not to expect the full benefit of this practice to be extremely obvious on the immediately fucceeding crop.

If circumftances admit of your procuring the galt in confiderable quantities by itfelf, its effects might likewife be tried when mixed in compoft, and laid on grafs land, as a top-dreffing before winter.

You afk my opinion on the propriety of a dairy farm on your eftate, and my obfervations on the beft manner of conducting one. I do not think your land adapted for it, as I obferved a great fcarcity of fucculent herbage, during the dry weather which prevailed at the time I furveyed your property. In my opinion, a dairy farm is only advifeable in marfh land that is not fitted for profitable tillage hufbandry, fuch as in the lower parts of Cambridgefhire.

If you are determined to try the dairy, I would recommend that it be combined with the tillage hufbandry I have already endeavoured to line out for you. But I by no means think it will turn out nearly fo profitable as the combination of fheep and tillage; and I know that the paſturage of fheep improves the foil, both for the production of grafs, corn, and leguminous crops, vaſtly more than the paſturage of cattle or horfes.

In the event of your keeping a number of cows, I would recommend that they fhould be fed altogether in the houfe or fold-yard, during fummer, on cut clover, lucern, and tares; and on hay, when thefe fucculent green foods are not to be had. I am certain, that, in this way, two acres of land will maintain fully as much ftock, either of cows, oxen, or horfes, as three acres can poffibly do in free paſture. You will in this way, likewife, get a vaſt quantity of additional manure for your tillage land. A fmall clofe, near the houfe, fhould be appropriated for the cows to get air, exercife, and water, for an hour or fo, every morning

and evening. They ought likewife to be regularly curried every day.

For the fame reafons, economy of food and production of manure, I would ftrongly recommend keeping your work horfes in the yard all fummer and autumn on cut green food.

I do not at all approve the long yokings which are practifed with you. In this country, the horfe-work of the farm is divided into two yokings, with a conſiderable interval for food and reſt. The horfes are thus enabled to do a vaſt deal more work, with a great deal leſs fatigue both to the men and themſelves. In hot weather, we with the horfes to begin work by four o'clock in the morning. They work five hours; then reſt at home during the heat of the day, and again work for four hours, ſometimes five, in the afternoon.

While leading home corn or hay, we begin as ſoon as it is light, or whenever the dew is off, and work continually as long as we can ſee; the horfes having always abundance of food before them while unloading. In theſe two employments, every exertion of ſpeed is uſed, leſt the crop be injured by the coming on of bad weather.

Should you be inclined to build a farm-court of offices on a complete plan, I ſhall endeavour to deſcribe one in my neighbourhood, which I think the moſt perfect I ever ſaw.

The buildings which compoſe the court of offices, form three ſides of a ſquare, open to the ſouth, having the barn in the middle of the north ſide, behind which is the rick yard; and the ſtables, cow-houſes, and feeding ſhed, complete the reſt. At a proper diſtance from theſe, leaving a wide paved road all round, a ſquare wall encloſes the fold yard, which is divided into four, by two croſs walls, and has a large ſquare ſhed, open on all ſides, over the interſection of the croſs walls. Proper gates are placed to admit the cattle, and to take out the manure; and windows are left in the ſquare outward wall, oppoſite to the doors of the ſtables and cow-houſes, for throwing the litter into the fold-yard.

By this arrangement, the young cattle of four ſucceſſive years are kept ſeparate, which prevents the younger being maſtered, gored, and hindered from feeding by the elder. They have all a covered ſhed, for ſhelter during bad weather; and there are racks for giving them fodder, both in the four diviſions of the ſhed, and in the four open yards.

Along the ſouth ſide of this yard, there are proper places for pigs and poultry; and a pump ſupplies water to all the diviſions, by means of pipes and troughs. The ſhed, for carts and implements of huſbandry, is at the ſouth end of one of the wings, for eaſy

eaſy acceſs. A granary is conſtructed in one of the lofts adjoining the barn; and the cattle-man has the only dwelling houſe in the yard. All the dwellings of the reſt of the farm ſervants are at ſome diſtance, to leſſen the danger of fire.

In ſummer and autumn, the work horſes are kept, upon cut green food, in the four diviſions of the fold-yard.

Another neighbour of mine is getting a new ſet of offices, in which each pair of work horſes, and each pair of feeding oxen, are to have an open ſhed and fold-yard; allowing them, at all times, to be either in the air, or under cover, at their pleaſure.

The only other topic which occurs to me, as worth troubling you about, is the proper diſtribution of farm labour throughout the year, ſo that at all times your men and horſes ſhall be fully and profitably employed, ſhall never be idle, and ſhall never be hurried. This, you will readily obſerve, is of infinite importance with regard to economy, as idle horſes muſt be fed, and idle men muſt draw their wages.

Suppoſe harveſt and the wheat ſeed finiſhed, the next operation is, to plough the land which is to be fallow, or to carry beans, peas, or tares, next year. This continues during the whole latter part of autumn, and throughout the winter, in its intervals of open weather, provided always that the land is not wet; for it ſhould be an invariable rule, on your land, never to plough it when wet. When weather forbids ploughing, manure is to be collected, or led out to the neighbourhood of where it is afterwards to be laid upon the land.

In early ſpring, the ploughing, drilling, and harrowing of the bean and tare land, next occupies the ſtrength of the farm. After that, the oat crop, and then follows the barley land. When theſe are completed, the various operations of the fallow proceſs, the horſe-hoeings to the drilled crops, leading home hay, and then corn, fill up the months of ſummer and harveſt. Laying manure upon the fallow land, giving it the ſeed furrow, and harrowing in the wheat, fill up the remainder of the ſeaſon. Bringing home fuel, carrying out grain to market, and, if there is a thraſhing machine, thraſhing out the crop, are jobs that occur at intervals, and which are to be performed when more immediate operations are not preſſing, and when weather does not allow to plough and harrow. *Vale.* *R. r. r.*

NOTE BY THE CONDUCTOR.

Theſe Strictures being now brought to a concluſion, it remains an incumbent duty upon us to return our ſincere and

hearty thanks to the author of them, for the abundant and liberal ſupply of materials thereby furniſhed to us. Nearly the whole advice given by him to his Engliſh friend, accords with the moſt approved ſyſtem of rural practice; and we are exceedingly happy to ſtate, that a number of our correſpondents have expreſſed great ſatisfaction with the information communicated. We will be proud to receive a continuance of this gentleman's favours, who appears well verſed both in the theory and practice of rural ſcience.

It is perhaps neceſſary to remind our readers of the origin of theſe Strictures. Requeſted by a gentleman reſident about fifty miles from London to viſit his eſtate, and give an opinion concerning the neceſſary improvements, the author, after a minute inſpection in Auguſt 1799, made a report, the ſubſtance of which is preſented in the ſeveral letters inſerted in this Magazine. We refer our readers to Vol. II. p. 38, containing an introductory letter which ſufficiently explains the ſcope and intention of the Strictures Indeed the author ſeems to have formed ideas of Engliſh huſbandry ſomething ſimilar to thoſe entertained by us, after examining the ſame tract of country which came under his obſervation. N.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*General Obſervations on Highland Rural Economy.*

SIR,

I am diſpoſed to believe that your correſpondent 'The Rural Economiſt' (page 262), meant well, when he communicated his '*Reflections on the means of preventing emigration from the Highlands*;' though I cannot approve of all the propoſitions offered by him for promoting the welfare and proſperity of that quarter of the iſland. I obſerve, that he conſiders capital ſtock as the *ſine qua non* of improvement, which, though I am willing to allow in the abſtract, yet on the whole is leſs neceſſary, when the preſent ſituation of the Highlands is conſidered. I am ſatisfied, were the preſent race of people ſuffered to remain in the Highlands, that ſufficient capital ſtock would ſoon be gained by them, provided they were ſecured by proper leaſes, and perſonal and predial ſervices, at this time ſo prevalent, utterly aboliſhed. Were theſe things done, the greateſt part of the Highlands might, in time, be as well cultivated and as populous as the mountainous countries of Wales and Switzerland. The Highlanders are ſure-

ly

ly a hard-working and induſtrious ſet of people when allowed to work for their own benefit; and is not this equal or perhaps ſuperior to a money capital? I own both would be better; but how ſeldom are they found united, and how little can we hope to ſee them tranſported to the Highlands? I would wiſh ſome good pen were employed in painting the generation of capital. Mere perſonal induſtry is certainly the great anceſtor. The induſtrious man leaves his family enriched by his little acquiſitions, and his example. His little property accumulates under the management of his children, and increaſes. The third and fourth generations become ſtill richer, and are able to improve their houſes, their cattle and uteniils, their furniture, their dreſs; till at length the country is poſſeſſed by rich farmers, and becomes well cultivated. Perſonal induſtry may therefore be conſidered as the male anceſtor of capital; ſecure tenure as the female; and, between them, ſince the reign of Henry VII., have been begotten all the riches and improvements of England. From thence ſprang our maritime ſtrength. It was country gentlemen who fitted out our firſt fleets of diſcovery. A Sir —— Gilbert of Devonſhire, Sir Walter Raleigh and others, pawned their landed property to furniſh capital for ſuch purpoſes. Our cities and towns were firſt enriched by the retail of goods wanted for the farmers, and by the purchaſe and exportation of corn and wool which the farmer produced. The children of retailers became what we properly call merchants, and ſo laid the foundation of the preſent great ſuperſtructure of Britiſh commerce. How eaſily the capitals of Glaſgow, Liverpool, and Birmingham, might be traced to this ſource, nay, even of proud London herſelf! To perſonal induſtry and ſecure tenure was added a good and free conſtitution, whereby the rich were ſecured from the rapine of the powerful, and their violence. Theſe three formed a great loadſtone, which has attracted all the metals of the world, and all its commodities, within the vortex of this ſmall iſland of Great Britain, the very debts of which exceed the wealth of the reſt of the globe. I have ſtated theſe things as explanatory of my reaſons for doubting the neceſſity of a money capital, which to your correſpondent ſeemed abſolutely neceſſary for the improvement of the Highlands, and which that country has little chance of receiving. Indeed I do not think that any benefit would be received from capital, unleſs the ſyſtem of ſhort leaſes and perſonal ſervices were to be at the ſame time abandoned.

I lately examined a Highland eſtate, which has been managed in a liberal manner for a number of years back, from which I can deduce ſtrong arguments in ſupport of what I have advanced. The number of families upon the eſtate alluded to, amounted, ſeventeen years ago, to 124, and I now find an increaſe of 77, the

whole amounting to 201. Theſe new families, ſuppoſing them to have cultivated only two acres of waſte land each, have added 154 acres of cultivated land to the eſtate; and I underſtand, one of them received lately 28l. to give up his little ſettlement to a perſon who wanted to dwell there. I heard of no emigrations of the people on the eſtate, except one man, who reported and returned. I found about 300 acres of plantation of larch and fir trees in a very thriving condition, in a country deſtitute of wood. Many of the tenants are now lodged in houſes built with ſtone in place of earth, which formerly was the material whereof their habitations were compoſed.

I ſaw a *Meadowbank midden* or two on the eſtate; and it gives me pleaſure to notice, that this compoſt will be of ſingular advantage in the improvement of the Highlands. It is only of partial utility in other parts of Scotland; but in the northern diſtricts, where every tenant has acceſs to peat earth, it will prove an univerſal benefit, and tend more than any thing to extend the cultivated land, by quadrupling the manure.—With beſt wiſhes for the ſucceſs of your Magazine, I am,

Yours, &c. X. Y.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*Queries concerning Moſs anſwered.*

SIR,

As no other of your correſpondents, better acquainted with the ſubject, have anſwered the query of R. C. in your Magazine of May laſt, 'Which is the beſt ſort of peat moſs for manure?' I preſume to anſwer, from my obſervation, that of the three ſorts deſcribed by him, the wood moſs is the beſt. The black peat, principally compoſed of heath, decayed ſphagnum, and the roots of the eriophora, is next. And the ſpongy ſlow-moſs, or red-bog, as it is called in Ireland, derived almoſt entirely from more recent ſphagnum, is the worſt for every purpoſe of manure or fuel.

A. S.

BRANCH

# BRANCH II.

## REVIEW OF AGRICULTURAL PUBLICATIONS.

*Statiſtical Survey of the County of Down, with Obſervations on the Means of Improvement: Drawn up for the conſideration of the Dublin Society. By the Reverend John Dubourdieu, Rector of Annahilt.*

THE Reporter of this ſurvey has executed his taſk in a way that does credit to his impartiality and abilities; and we hope it will afford ſome entertainment to our readers, to receive a general idea of the ſtate of a conſiderable county in our ſiſter kingdom, from a review of this performance. This we ſhall give as conciſely as poſſible, while we remark particularly what is either praiſeworthy or cenſurable in this ſurvey, as far as regards the *agriculture* of Downſhire. What is ſtatiſtical, and not properly agricultural, muſt either be omitted entirely, or noticed very ſlightly.

The geographical ſtate and circumſtances of Downſhire form the ſubject of the firſt chapter.

It is a maritime county, being bounded on the eaſt and ſouth by St George's Channel, containing above 558,000 Engliſh, 440,000 Scotiſh, or 344,648 Iriſh acres. Its civil diviſions are nine baronies of unequal value, extent, population, and proportion of public burdens; and its eccleſiaſtical diviſions are, the two biſhopries of Dromore and Down, the former containing twenty-one, and the latter forty-two pariſhes. The climate is variable, but not ſubject to the extremes of heat or cold, or of wet or dry. The Reporter remarks, that the month of October is generally very agreeable, and that the extremes of either wet or dry ſeaſons are equally unfavourable with reſpect to the fruits of the earth; and he ſtates as a proof of this, that the years 1799 and 1800 were equally unproductive, the crops of both years not equalling that of 1801. We ſubſcribe to his general remark, though we ſuſpect that the crop of 1801 was not more than equal to that of the two preceding years, and believe that the deficiency of crop 1800 was in no ſmall degree occaſioned by the bad ſeed uſed that year.

We are informed, that the ſoil of Downſhire 'has every gradation from ſandy loam to ſtrong clay, which is in moſt places intermixed with ſtones of every ſize.' It has been obſerved, that ſo great a proportion of ſtones is mixed with the ſoil of Ireland,

that we should rather call the different soils by the names of a stony loam, a stony clay, &c. than either a pure loam, or a strong clay. The surface is extremely unequal, there being little flat land, except on the banks of rivers. Though no mines are wrought at present, copper and lead ore have been found in different parts of the county. Eight different places are famed for their mineral waters, which are all chalybeate; and one place, viz. Ballynahinch, for its sulphuric-chalybeate spring. An alum spring, of unknown strength, is also mentioned.

There are four principal rivers in this county; and we remark with pleasure, that two of these, the Newry and the Bann, are united by a canal, by which vessels of fifty and sixty tons pass through the heart of Ulster. Another canal is connected with the Laggan; but we are sorry to find, that owing to its not being kept detached from the river, it is not likely to be beneficial either to the proprietor or to the public. Mr Dubourdieu remarks, that the Laggan is a mountain river, subject to great floods, and very unfit for navigation. When we read this part of the survey, we could not help thinking of the reply made by the celebrated Mr Brindley, the conductor of the Duke of Bridgewater's canal. When the House of Commons asked him, what was the use of navigable rivers? he answered, 'To feed navigable canals.'

In this county, we are informed, that the number of small lakes or loughs is very considerable, and forms one of its many beauties, though most of them are unadorned with wood of any kind.

The state of property is considered in the Second Chapter of the Survey.

Property is much divided, and in all gradations, from the largest estate to the smallest freehold. The management of estates is described to be very simple; consisting only in letting the farms, receiving the rents, and regulating the turf bogs, which are very valuable, but much wasted, by being cut down for fuel. The Reporter seems to be too much alarmed for the failure of these; and informs us, that a whole day is often consumed in going for and returning with one load of fuel from these bogs. Whenever this happens in a maritime county, which has two navigable canals, if industry is encouraged, and coals imported, these distant or decayed turf bogs will soon be deserted, and the agriculture of Downshire will be much improved, by employing the farmers' servants and horses in hoeing of turnips during the summer months, instead of taking wretched cars to a great distance for half a load of fuel.

Most of the property is freehold, and the number of freeholders is above *six thousand*. We are afraid that this number is too great,

great, viewed either in an agricultural or political light. Were there an Agrarian law eſtabliſhed in Downſhire, and its territory divided among its freeholders, each of them would have fifty Iriſh acres. This would produce a temporary equality, and a turbulent democracy, in which agriculture would be very imperfectly conducted. But at preſent, when landed proprietors contrive to keep a multitude of freeholders on their eſtates, in order to promote their county politics, neither rational liberty, nor an improved cultivation, will be attended to by the great body of theſe freeholders. We ſhould be glad to hear there were more large farmers, and fewer freeholders in this county. The rents indeed are high, being 20s. per Iriſh, 15s. 6d. per Scotiſh, or 12s. per Engliſh acre.

The Third Chapter treats of the State of Buildings; and the judicious Reporter very properly paſſes over the ſpacious habitations of the nobleman, and the numerous and elegant manſions of the gentleman, in order to inſpect the houſes of the farmer, and the cottages of the poor. We are ſorry to find, that theſe are in general neither large nor convenient. The farmer's houſe is for the moſt part a low cottage, with only one fire-place, and two or three roofts without fire-places, all on the ground floor. The cauſe of this want of fire-places is the Iriſh tax, called hearth-money, amounting to 2s. 8½d. for every fire-place, where there is more than one in a houſe: And he judiciouſly obſerves, that if Parliament had made every houſe which had two fire-places, pay only for one, little loſs would have accrued to the revenue; and fevers, and other infectious diſorders, would not be ſo fatal. This deſerves the attention of our legiſlators, who wiſh to gain the affections, and to promote the happineſs of the people of Ireland. The cottages are deſcribed to be in general very poor, and the cottagers much toſſed about and haraſſed. The judicious Reporter recommends to the landed proprietors to build villages for the accommodation of all cottagers who are tradeſmen or manufacturers. Married ſervants, whoſe dependence is entirely on the farmers, muſt of neceſſity reſide where they are employed. It is to be hoped, that the union of Ireland to Great Britain will tend much to ameliorate the condition of the peaſantry of our ſiſter kingdom; and it is not to be denied, that much of the diſcontents in that kingdom are occaſioned by the wretched condition of many of the lower claſſes of the inhabitants. The ſituation of the peaſants of Scotland has been much improved ſince 1707.

The Fourth Chapter of the Survey treats of the Mode of Occupation.

Here the ſize of farms is firſt conſidered. The large farmer, who rents from 50 to 100 Iriſh acres, ſubſiſts ſolely by agriculture;

ture; and the small farmer, who subsists partly by his trade or occupation, possesses from 20 acres down to a single acre. The minute division of farms is very properly represented as prejudicial to agriculture; and the number of small landholders, or petty occupiers of land, who were ruined in 1800 and 1801, in consequence of the deficient crops of 1799 and 1800, is adduced as a matter of fact, to prove that the tradesman or manufacturer who has no land, does not find so much difficulty in maintaining a family, as he whose attention is divided, and whose annual expences are increased by his having a small farm, of which he must pay the rent and taxes in an unproductive season. It is also very properly observed, that 'the industrious cottager, whether labourer or weaver, is as beneficial to the public, and as comfortable to himself, as any other denomination of persons; but that every gradation from him to the real farmer, is only a gradation of difficulties.'

The character of the Downshire farmers is represented in a very favourable light. The middle class, who rent from 20 to 50 Irish acres, are described as a respectable class of men, in point both of understanding and morals. The Reporter adds, that 'an estate portioned out among men of this description, where nothing is deducted for repairs, where there are no poor's rates, and where tithes are moderate, must be productive, and not difficult to manage.' Much as we respect his opinion, we wish to see more large farms, a number of villages erected, and the farmer's capital all applied to the improvement of the ground, while he pays a per centage to the landlord, for money expended on neat and convenient farm-houses, and other buildings. We acknowledge this would occasion a little more trouble in the management of estates; but that would be repaid by the improved agriculture, and also improved architecture, of Downshire.

In the present state of that county, it is said, that if two farms taken together should employ two draught beasts, all work that requires two being performed by a mutual lending of cattle, a very great point would be gained, as much as the Reporter thinks can be expected. We hope he shall live to see his farmers fewer in number, and almost every one having constant employment for at least four draught horses, while the villages abound in expert manufacturers, or industrious tradesmen and day-labourers. In the mean time, we observe with pleasure, that the rents are almost all paid in money; that tithes are very moderate, and that there are no poor's rates in this county.

On the last article of expence and profit, the Reporter could not be supposed to give any thing accurate; but he has stated a comparison, taken from fact, of the distribution of crop on two farms

farms of 50 acres each, which deſerves particular attention. The firſt farm was well cultivated, and had nearly one third part in clover; the ſecond had no clover, and was cultivated in the common way. The former contained 8 acres of wheat, 8 acres of barley, 8 acres of potatoes, 8 acres of oats, and 16 acres of clover, with 2 acres of meadow; and it maintained a ſtock of 7 cows and a bull, 7 young cattle, 15 ſheep, 3 pigs, and 6 horſes. The latter contained only 4 acres of wheat, 4 acres of barley, 8 acres oats, 4 acres potatoes, 4 acres meadow, 26 acres graſs, and maintained only 4 horſes, 8 cows, 6 young cattle, and a few ſheep. The Reporter aſcribes this difference ſolely to the introduction of clover; but it was doubtleſs occaſioned, in part, by the raiſing a greater quantity of potatoes, and by a more improved cultivation. We find afterwards, that there was not ſo good a rotation of crops as might have been eſtabliſhed on the firſt mentioned farm; and yet its annual produce was at leaſt 100l. more valuable than that of the ſecond; or it was 2l. per acre of greater annual produce. This ſtatement of facts is worth a thouſand ſpeculations on agriculture, or calculations of expence and profit.

The Fifth Chapter of this Report reſpects the Implements of Huſbandry.

Here we find, that 'thoſe which are in general uſe are few and ſimple: Cars for draught horſes; ploughs for tillage, of no great ingenuity, but light and ſtrong; and harrows, for either one or two horſes.' It would have been a little more ſatisfactory to have informed us, what is the uſual price of theſe cars, when the axle ſtill turns with the wheels; how great a load they carry; whether theſe wheels have iron hoops or rings; and whether they ſtill be all of wood. We obſerve, with pleaſure, that excellent implements of huſbandry are uſed by the proprietors, and by the firſt claſs of farmers. Theſe will be gradually adopted by the middling farmers; and then the ſmall farmer will either obtain them, or he muſt ſoon become a day-labourer, from the diſadvantages attending ſmall farms and bad implements of huſbandry, and from the riſe that is taking place in the money price of labour.

The Sixth Chapter, on the ſubject of Fences, informs us, that the enclоſures, in general, are a diſgrace to the county, generally conſiſting of a ditch or bank, without any hedge, ſometimes having a few plants of furze ſtuck into the bank, but very rarely planted with quicks, though the raiſing of hedges is well underſtood, and, the Reporter hopes, will ſoon be more generally practiſed. We think, that dry-ſtone walls, or Galloway dikes, ſhould be generally uſed in a country ſo full of ſtones; and that

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thorn hedges should be raised in places where stones are not in so great abundance; and we hope, that gates, as well as fences, will be generally used in Downshire. At present, we find, that 'the usual method of putting cattle into the fields, is by a bush stuck in between two jambs of stone or sods, which is put into its place, or removed from it, at the evident peril of the fingers.' We hope that Downshire shall soon have better gates, and better enclosures.

The Seventh Chapter, which is entitled Arable Land, is divided into five sections: 1. Tillage: 2. Fallowing: 3. Rotation of crops: 4. Crops commonly cultivated: and, 5. Crops not commonly cultivated.

We are sorry to find, amongst several judicious observations on tillage, and some high compliments paid to the *classical Tull*, that the general practices of the farmers are very bad; that fallowing is seldom practised; that the method of cropping is so exhausting to the land, being generally incessant ploughing till the ground is quite worn out; that the barony of Lecale is the only place in which any thing like a rotation of crops is generally observed; and that, even there, two, and sometimes three white crops, are taken, without one green crop intervening; nay that, after a potato fallow, which is the general preparation for wheat, instead of sowing grass seeds with the wheat after hoeing it in spring, two other corn crops are often taken before it is laid out in grass.

Among the crops commonly cultivated, we find that *bere* is called *winter* barley, and is managed every way like wheat. We are at a loss to know what species of barley is here meant. *Bear* or big, or what is called *Chester* bear, is a four-rowed grain, and runs to straw more than barley, which is two-rowed, if sown in winter. If sown in spring, it is from two to three weeks shorter time on the ground than barley. We suspect there is some mistake here.

We are sorry to find, that while *turnips* are among the crops *not commonly* cultivated, peas should be less used than formerly. It would be a great matter, where a field has been limed, and produced a crop of wheat after potatoes, that it were sown with peas before another white crop, viz. barley, is taken.

The different methods of cultivating potatoes are described in this chapter; and the Reporter has stated a fact, which seems to show, that repeated crops of potatoes do not exhaust the land, viz. that, near the town of Killough, he saw a piece of ground that had produced crops of this root for 40 years; and that, in 1801, they were better than ever he had seen them. We believe, that if the flowers are picked off, and the potato not allowed to apple, potatoes are not so exhausting a crop as is generally imagined.

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The Eighth Chapter treats of Grafs.—The natural meadows of this county are not well managed; though the Reporter has fuggefted feveral improvements. Among the artificial graffes, we find the white grafs, *holcus mollis*, fown on *clay* foils where the red clover has not yet fucceeded (we fuppofe becaufe the land has been too foul and too much exhaufted), and that trefoil (*medriago lupulina*) is recommended as much fuperior to red clover for grazing or cutting green, though as cheap as hay feed. We have fome doubt as to the fact, where the red clover is properly cultivated; but it may be worth while to try an experiment in Scotland, where the land is in good order.

This chapter contains an account of the principal graffes found in Downfhire. Here we were furprifed to find the *avena elatior*, or knot-grafs, a moft troublefome weed in arable land, had, when moderately dunged, produced a moft luxuriant crop of hay.

In the fame chapter, under the article *feeding*, we learn, that two bullocks, weighing eighteen hundred weight, were, in 1801, fold for 96l.—a proof of the high price of butcher meat, as well as of the rich feeding at Hillfborough.

The Ninth Chapter, on Gardens and Orchards, informs us, that gardening is not much attended to; that potatoes feem to be gaining ground on all other roots and vegetables, except among gentlemen, and in the neighbourhood of Belfaft.

The Tenth Chapter is on Timber, Plantations, and Woodlands. We learn, here, that Downfhire is not a well-wooded country; but a lift of various kinds of timber trees, fraught with ufeful information, is given us; and we have a table of the circumference of various kinds of trees, between 50 and 60 years old.

On the fubject of Waftes, which forms the Eleventh Chapter, we are happy to find, that the only part of the county, which can in any degree be referred to the above title, is contained in the mountains of Mourne and Upper Iveagh; and even thefe afford, in moft places, fupport to a hardy race of cattle and fheep; and that the turf bogs, in the vallies between the mountains, by opening of new roads, are like to become of great value, being worth four guineas an acre for the purpofe of fuel. We hope that coals will be found in this county, or, even if imported, will be fubftituted in place of thefe diftant turf bogs; and that the good women, who diflike the fmut of the coals, will lay afide their prejudices, and allow their hufbands to improve their lands, inftead of carrying turf from a great diftance.

The Twelfth Chapter, entitled *Improvements*, treats of Draining, of Paring and Burning, of Manuring, of Weeding, of Irrigation.

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Under-draining, we are told, is in general well underſtood, and not difficult to execute, from the number of ſtones in the land. The Reporter does not ſeem to be acquainted with Mr Elkington, but mentions Dr Anderſon's method of tapping; and relates an inſtance in which it ſucceeded. Paring and burning is only practiſed in mountainous parts, or where moory ſoil abounds. Dung is principally applied towards raiſing potatoes; and the little farmers are ſaid to be very induſtrious in this particular. One farmer's method is inſerted as deſerving of notice—'His dung-hill being placed on a riſing ground, he made a cut from it, with two or three ſtops to ſave the water in its deſcent: above theſe ſtops he always threw in a quantity of earth, which being ſaturated with the moiſture from the dung, he removed it, and again filled the trench. His attention to every branch of huſbandry was directed by equal ſagacity; and, from being a labourer, he took a farm, not 20 acres, and died lately worth 500l.' The fact was worth recording; and the man's name ought to be known. The fame of the induſtrious farmer is well earned; and ſtimulates others to exertion.

The injudicious cropping, after ground has been limed or marled, is honeſtly related in this chapter. The careful weeding of potatoes and flax is alſo mentioned; and the Reporter wiſhes that paſture were alſo weeded. Were the land properly drilled and hoed, and not exhauſted by cropping, before it was laid down, the weeding of graſs would be unneceſſary. The watering of meadows in this county is in its infancy; yet the Reporter has made ſeveral judicious obſervations on this ſubject.

The Thirteenth Chapter treats of Live Stock, viz. Horned Cattle, Horſes, Sheep, Hogs, Rabbits, Pigeons, and Bees.

The cattle are kept chiefly for the dairy, and a mixture of every kind; although there are a few breeds of excellent cattle. The county does not ſupply itſelf in horſes; and its only native ſheep are confined to the mountains: a vaſt number of hogs are bred annually. Rabbits are kept only in a few places. Poultry of all kinds are reared chiefly with potatoes. Pigeons are general, though there are few pigeon-houſes. Bees are reckoned to thrive well; and a plate of a bee-hive is given in the ſurvey. By this kind of hive, which is filled with different glaſſes, much honey is gained, without killing the bees; and it is ſtated, that upwards of 90 lb. of excellent honey were taken out of a large wooden hive, in which the common or inner hive was encloſed.

The Fourteenth Chapter, which is entitled *Rural Economy*, informs us that the farm ſervants take all kinds of work in their turn: that cottagers are paid partly in money and their diet, and partly by their holdings. Labourers receive their diet in part of their

their payments, and the money, or wages in money, varies according to circumſtances, from 6d. to 2s. *per* day.

The Fifteenth Chapter treats of Political Economy, as connected with agriculture. Here we learn, that the roads are excellent, but too often ill conducted; and ſheep, inſtead of being nearly level: that fairs are eſtabliſhed in every county, and weekly markets in moſt of the towns: and that the exports of the county, in linen, pork, wheat, and barley, are very valuable. A ſhort hiſtory is given of the linen manufacture, and an account of the markets where the produce is ſold. We muſt, here, expreſs our regret, that we have not the cuſtomhouſe abſtracts of theſe exports, nor the ſeal-maſter's accounts of the linen ſtamped for ſale. The population of the county is above 220,000 perſons, or one perſon for every $1\frac{1}{2}$ Iriſh acre.

The Sixteenth Chapter is on the Obſtacles to Improvement. Theſe are, the number of ſmall farmers; the exhauſting the land by repeated crops of grain; the want of capital to carry on improvements; and the want of good houſes, which occaſions a waſte of ſtraw for thatch, that is neceſſary for the ſupport of cattle.

In this chapter, the corn-laws are in general approved of; but the ſuſpenſion of exportation, in 1796, ſeems to be complained of, not without reaſon.

The Laſt Chapter contains a number of general obſervations; and is divided into fifteen ſections. From theſe we learn, that there is an agricultural ſociety in this county: that the weights and meaſures are tolerably uniform: that the fiſheries are valuable, if they were attended to: that moſt of the landed proprietors and clergy are reſident: that the county was ſurveyed in 1653, by Sir William Petty, anceſtor of the Marquis of Lanſdown; and that a copy of his ſurvey is in the Surveyor General's office: that water-mills are chiefly uſed for grinding all ſorts of grain: that tenants are bound to their landlord's mill: that three different kinds of acres are uſed in meaſuring, the Iriſh, Scotch, and Engliſh: that the inhabitants in general are more ſober than formerly: that the price of cattle, ſheep, and proviſions has riſen very much: and that oxen are harneſſed, but not generally uſed.

In the concluſion to this chapter, the Reporter ſtates, that he has paid every attention to collect and give a faithful relation of the agriculture of the county of Down, and of the other ſubjects connected with it; and with the general proſperity of the kingdom. We are ſatisfied of his diligence, fidelity, and intelligence. On ſome occaſions we have differed from him; but, on many others, we have had reaſon to be pleaſed with his ſurvey.

vey. We have obſerved him giving very judicious directions, where the general practice of the county was not to be commended: And we add with pleaſure, that if the landed proprietors were as humane, and the farmers of this county as intelligent as the rector of Annahilt, the county of Down would advance rapidly in agricultural improvement; more rapidly, indeed, than the Reporter of this ſurvey would lead us to ſuppoſe. For, once the defects of a bad ſyſtem are known, and a few good practices are introduced by landed proprietors, or the better ſort of farmers, the example of a few is quickly imitated, and a ſpirit of emulation prevails among the lower orders of the people. To promote the proſperity of Downſhire, we would ſay to the landholders—'Build comfortable houſes and other farm buildings to your farmers; erect villages in convenient places; exact a moderate per centage as the rent of theſe houſes; give ploughs and other implements as premiums; and aſſiſt with capital any very intelligent farmer, when you make an addition to his farm, or his leaſe.' To the farmers we would ſay—'Clean your grounds with potatoes, or other green crops; but never take more than one white crop, till they lye at leaſt one year in graſs; and put always a green or a black crop between every two corn crops. Spend not the ſummer months in travelling for fuel to diſtant turf bogs; but plough and hoe your potato, turnip and fallow grounds, and you ſhall be able to purchaſe coals for your fuel, with the increaſed produce of your fields.'

What is here applied to Downſhire may be addreſſed to ſeveral counties of Scotland, particularly the Highlands. Wherever ſmall farms are predominant; wherever capital ſtock is ſcarce; wherever the tenure of poſſeſſion is ſhort, or inſecure; unqueſtionably *there will be* found an imperfect huſbandry, and a depreſſed tenantry, together with their concomitants, bad implements and uncomfortable houſes. Indeed, theſe things follow one another ſo regularly, that a pretty correct opinion may be formed of any diſtrict, from a tranſitory inſpection. Ireland, at the preſent moment, may be conſidered as not one ſtep further advanced in agricultural improvement, than Scotland was in 1750; and the meaſures ſucceſsfully adopted in the latter country, could not fail of producing the like happy effects in the former, though a conſiderable time muſt neceſſarily intervene before they could be fully recogniſed.

E. E. H.

BRANCH

# BRANCH III.

## Agricultural Intelligence.

The ſevere drought, which prevailed through the ſummer and autumn months, occaſioned crops on the eaſtern coaſt of the iſland to be defective in bulk; and ſtack yards may be ſtated as fully one third leſs in ſize than thoſe of the preceding year. Through the weſtern, and many of the midland diſtricts, according to our information, the drought has not been attended with evil conſequences; and from all accounts, the wheat crop may be conſidered as equalling, if not exceeding, an average, except in a few Engliſh counties which were viſited with mildew. The weight of the grain alſo exceeds that of ordinary years; and, from the warmneſs of the ripening ſeaſon, the flour will abſorb a greater quantity of water than cuſtomarily. We ſtated in our laſt, that the quantity and quality of wheat were regulated by the degree of heat which prevailed in the latter part of July and firſt weeks of Auguſt; the truth of which has, this year, been ſtrikingly exemplified.

Oats, which are cultivated to a great extent in Scotland, may, however, be regarded as an inferior crop in almoſt every diſtrict. An exceſs of heat always proves injurious to this grain, making it ſmall and ſhrivelled, with a greater proportion of huſk or offal than happens in ſeaſons of more moiſture. Indeed, it is an aſcertained point, that weather favourable to wheat and barley, is adverſe to oats. A finer appearance was ſcarcely ever ſeen than what the oat-fields univerſally diſplayed in the latter part of June; but the continuance of drought rapidly changed the agreeable picture, and myriads of black inſects or caterpillars, which, in ſeveral diſtricts, lodged upon the ſtalk and ear, contributed to make matters ſtill worſe. It may reaſonably be believed, that theſe inſects were the conſequence, not the cauſe of a failure, and that their attacks would have been unſucceſsful, had the plant not been previouſly in a diſeaſed ſtate. Fat horſes are ſeldom or never troubled with the ſcab; whereas, nothing is more common than for poor ones, to be attacked with that diſorder. We noticed ſeveral oat-fields, in particular ſituations, nay, even contiguous to infected fields, which, in a great meaſure, eſcaped the ravages of the caterpillar, owing to the ſtalks being in a thriving condition, and perſpiration going regularly forward.

Beans, a very important article in many diſtricts, were greatly ſtunted by the drought; and, in many places, will yield a poor return to the farmer. On light ſoils, they were neceſſarily bad; on clays, when mixed with peas, they were tolerable; but on deep loams, though of leſs bulk than uſual, the produce will not be materially defective. Though the grain is rather ſmall, the weight exceeds that of laſt year; and being fully ripened, and well harveſted, it is to be hoped that the deficiency will be inconſiderable.

To turnips and potatoes the dry weather has proved remarkably unfavourable. The plants of the former, at one period, promiſed a plentiful return; but we are ſorry to ſay, that in few inſtances have previous expectations been realized. Attacked in the front by the caterpillar, and in the rear by the worm, a more general deſtruction has enſued than perhaps was ever known. Potatoes have alſo ſuffered much, and cannot be rated as exceeding half of an ordinary crop. Culinary vegetables, of every kind, were much retarded in their growth, and threaten to prove ſcarce articles in the after months.

The grain markets during the quarter, have, on the whole, maintained a kind of equability, though oats, in the courſe of autumn, roſe rapidly in price. From the quantity of wheat and oats imported during the year, it is evident, that the laſt crop, though confeſſedly good, was unequal to the general demand; which ſubſtantiates what we have uniformly maintained, that the conſumption of Britain requires an additional quantity of cultivated land. Exiſting circumſtances have occaſioned of late a great quantity of grain to be thrown into the market; but the truth of our doctrine will perhaps be ſufficiently aſcertained before next autumn arrives, unleſs events ſhould take place (perhaps more feared than neceſſary), which would at once throw trade of every kind out of its common courſe, and ſo prevent any juſt concluſion being drawn. Indeed we have heard meaſures recommended, that would ruin numberleſs individuals, and ſubject the country to famine, or at leaſt to dearth at an after period. Without deſcending to particulars we ſhall only ſay, that ſeveral of theſe meaſures are injudicious, ſome of them impracticable, and others, if executed, would throw the improvement of the country a century backward. Supplies can always be commanded by a ſuperior force, and thoſe who are maſters of the field will never want proviſions while ſuch are to be found in the country.

This has been an unfavourable ſeaſon to the graziers, as the beſt paſture lands rarely afforded a full bite. Stock was purchaſed at high prices, and, latterly, fat cattle have rather depreciſed in value, and ſheep ſtill more ſo; all which things muſt make the trade a bad one. Lean ſtock of all ſorts, particularly ſheep, are looking

down wards

downwards, though it is to be apprehended that the declenſion proceeds from cauſes of a temporary nature. In the preſent ſtate of the country, however, it is difficult to ſpeculate, with preciſion, upon ſuch matters.

Some of our Engliſh readers complain, that the Scotch meaſures of capacity are not underſtood by them, and requeſt an explanation. To ſuch we muſt, in the mean time make a reference to our Firſt Volume, p. 444. where a table is given, which, though not an accurate one, will throw ſome light on the ſubject. In our ſupplementary Number, it is probable that the ſize of the Scotch meaſures of capacity will be further elucidated; but at preſent we may only ſtate, that when a *boll* is mentioned by us, it is the Linlithgow or national ſtandard boll that is meant, which, for wheat, beans, and peas, is a trifle more than four Wincheſter buſhels; and for barley and oats, is rather more than ſix buſhels. By attending to theſe things, the meaſures, uſually condeſcended upon in our work, may be nearly aſcertained.

A copy 'of the propoſed rules and regulations of the Morayſhire farmers fund, for the benefit of widows, orphans and decayed members,' has been tranſmitted to us; and we are in duty bound to obſerve, that ſuch an inſtitution embraces the moſt meritorious purpoſes. It has often been regretted that ſuch inſtitutions were not generally eſtabliſhed for the benefit of agriculturiſts; therefore, we rejoice to ſee a beginning made upon wiſe and rational principles. The propoſers of the meaſure, we underſtand, fought out the beſt advice, and employed William Morgan, Eſq. of London, (nephew of the late Dr Price) perhaps one of the firſt calculators in Britain, to make up the neceſſary tables.

Contenting ourſelves at preſent with wiſhing ſucceſs to the deſign, and an extenſion of the principle in every quarter, we ſhall reſerve for our ſupplementary Number, various particulars communicated by an intelligent gentleman of that county, who took an active hand in the arrangement.

## Extracts from Private Correspondence.

### SCOTLAND.

*Letter from a Gentleman, deſcribing the Crops of Fife and Ayrſhires, Oct. 8.*

'I was lately in Fife, and found that the interior of that county had ſuffered ſeverely from ſuch a dry ſeaſon, and that the crop could not be eſtimated at more than two thirds of an ordinary average. I have ſince been in Ayrſhire, and learned that the drought had rather been beneficial as injurious to that diſtrict. The Ayrſhire huſbandry, in my opinion, ſtill continues very bad, though the land is moſtly all enclo-ſed, and

ornamented with planting. The hedges are generally of hawthorn, frequently mixed with privet; which, keeping its leaves long, is a great advantage. A plan of planting hedges in Ayrſhire and in the pariſh of Mearns in Lanarkſhire, is to put the thorns into the face of a ſtone wall, to grow through it from a bank on the other ſide, which I conſider to be a bad ſcheme, as the ſtones incumbent on the hedge muſt check its growth greatly The lands in the neighbourhood of Irvine, are the fouleſt I ever ſaw any where. I obſerved no ſummer fallow in Ayrſhire, and was informed that nine tenths of the leaſes in that diſtrict, prohibit the tenants from having more than one third of their farms under tillage. Some of them are reſtricted to one fourth.'

*Letter from an extenſive Farmer in Dumfrieſſhire, Oct. 8.*

'The weather during harveſt was remarkably good, and the crop, with ſome trifling exceptions, is now ſafely ſecured. We do not ſow much wheat in this quarter; but what we have is good, and ſo is barley. Oats are rather light, and not well filled; but we had an abundant crop of hay, which ſells at 9d. and 10d. per ſtone of 24 lib. The grain market is dull. Wheat 6s. 6d. and 7s. Old oats 3s. Of barley, little or none is yet ſold, our chief demand being from Liverpool and other places in Lancaſhire.

'The ſale of cattle in England is not ſo briſk as ſome time ago, and prices lower. At Broughhill fair, cattle freſh in condition brought good prices, but lean ones ſold with difficulty. Sheep had a dull ſale, and at reduced prices; and my opinion is, that a greater fall will ſtill be felt, owing to the immenſe numbers daily coming from the Highlands. I was lately in Northumberland in ſearch of breeding ewes, and purchaſed ſome of the beſt Leiceſters at 63s. per head. This ſort is infinitely ſuperior to what is called the Bamburghſhire breed, and I ſtrongly recommend them to every farmer who poſſeſſes decent land. He ſhould ſtudy, however, to ſelect the real kind, otherwiſe his profit will be inferior to thoſe who are more fortunate or attentive. My wedder hogs, this year, weighed from 20 to 26 lib. avoirdupois per quarter, and ſold at 54s. per head. I had my tups from Mr Culley, and now poſſeſs a ſtock preferable to any in this county.'

*Inverneſſhire Quarterly Report.*

The harveſt around Inverneſs was finiſhed ſeveral weeks ago, but ſome fields are ſtill ſtanding out in the Highland diſtricts of the county. In point of produce, whether corn or ſtraw is conſidered, the crop is much worſe than I remember to have ſeen, and may be eſtimated as fully one third below an average. What wheat we have is good in quality. Barley much ſuperior to laſt year's growth; but oats are very inferior. From the beginning of April to the 22d September, we had no rain worth noticing; of courſe the hay crop was very bad, nor is that of turnip much better. Potatoes have of late grown rapidly, and promiſe ſtill to make a tolerable return.

Very

Very little grain of this crop is as yet brought to market; but oat meal fells for 24s. and 25s. per boll of nine ſtone, and barley meal at 18s. per boll of ten ſtone. It is generally believed that conſiderable ſupplies of grain will be wanted for this county. Butcher meat, which was very high-priced through the ſummer months, has lately dropped much, and will continue to fall till the graſs beef and mutton are diſpoſed of; but there is every appearance, from the ſcarcity of turnips, that a great riſe will take place in the latter part of winter, and through the ſpring, upon theſe articles.—*October* 15.

*Banffſhire Quarterly Report.*

The crop is moſtly ſecured in this county, but proves more deficient in bulk than any in our remembrance. Notwithſtanding the unuſual proportion of old grain which remains unthraſhed, the ſtack-yards appear to be one third defective. The difference of land was never more diſcernible than in this ſeaſon; for the quantity and quality of grain depended much more upon ſoil than cultivation, which often is not the true criterion. Deep loams had in every reſpect the advantage, and produced crops equal, if not ſuperior, to thoſe of ordinary years; while the thin clays and gravels, in many inſtances, have hardly made returns ſufficient to defray the expence of ſeed and labour. From trials already made, it appears that oats will nearly yield meal for corn. The merchants price of old meal is 18s. or 18s. 6d. per boll of eight ſtone; and in retail, this is ſold at 14½d. and 15d. per peck.

There is ſtill ſmall demand for barley; nor are ſales of any conſequence expected, ſo long as the preſent high duties on malt continue. It is probable, that this grain will remain like a drug on the farmer's hand. We have not much wheat; but what was raiſed this ſeaſon is of excellent quality.

The demand for cattle was not great till the month of September; but a good number have been ſold ſince that time. Thoſe in good condition are ſuppoſed to be worth 9s. per ſtone ſinking the offal; but thoſe for the ſtraw-yard have ſunk one third in value. Stots and queys, not under three years of age, are ſtill in requeſt: and it is expected that the ſtock which will remain in the country, will not be much ſhort of the uſual number, but, generally ſpeaking, a year younger than formerly. It is to be apprehended that, from the great failure of turnips, and the ſcarcity of provender, there will be a difficulty of ſupplying the butcher market, and doing that juſtice to the growing ſtock neceſſary to enſure their arrival at perfection at the uſual period. Potatoes are very unproductive.—*October* 15.

*Letter from a Roxburghſhire Farmer, October 16.*

'We had fine rains in the beginning of Auguſt, which ſerved the fields of late grain conſiderably, but were not ſufficient to recover the graſs lands. Our grain harveſt advanced very faſt after the middle of Auguſt; and from the fineneſs of the weather and the lightneſs of the crop, the expence of harveſting did not exceed that of common years,

notwithſtanding that ſhearers wages were very high. The crop does not bulk well, wheat excepted; and from trials made, oats do not yield meal equal to expectation. Barley is unequal in quality. Beans and peas are not extenſively ſown in this county; but what we have of the former are much complained of. The wheats, both winter and ſpring, prove very gifty, and of fine quality; but potatoes are much below an average; and the turnip fields will not yield more than half their uſual produce, notwithſtanding of which, they are ſelling from 6 to 8 pounds per Engliſh acre.

'Fat cattle are ſelling high, and expected ſtill to advance. Fat ſheep are not plentiful; but from the great quantity of half-fed ones that muſt be diſpoſed of at this time, mutton is greatly reduced in value. We have very little demand for grain at preſent, and can hardly quote prices. Oats and barley, I believe, may be reported at 20s, and wheat at 38 to 40s. *per* Berwick boll of ſix Winchester buſhels.'

*Selkirkſhire Quarterly Report.*

The exceſſive heat which followed the rains of July 19th and 20th, puſhed on the grain crop very faſt; and the vegetable creation, which was beginning to wear a faint and languid aſpect, immediately aſſumed a thriving appearance. The rains which fell in the two firſt weeks of Auguſt, proved alſo very beneficial, by preventing the crops from being prematurely ripened.

In the higher parts of this county, corn and graſs have yielded returns equal to an average; but in the lower grounds, where the ſoil is drier, the ſtraw was rather ſhort, though the ear was full-ſized and properly matured. On the whole, the crop of this county may be fairly reported as equal to an average.

Irrigation was lately introduced on the Duke of Buccleugh's eſtate in this county, and bids fair to be attended with conſiderable advantages. Many of our lands are well calculated for receiving improvement in this way; and it is to be hoped that the practice will be extenſively diffuſed.

In conſequence of the goodneſs of hill paſtures, and the unparalleled mildneſs of the ſeaſon, ſheep ſtocks are in good condition, though the recent depreſſion of prices will cut deep into the farmer's profit. This depreſſion, though unfavourable to them, is certainly favourable to other claſſes of the community, and affords cauſe for the public at large to ſay that the year is crowned with the Creator's bounty.—*October* 17.

*Letter from a Gentleman in the Diſtrict of Carrick, October* 14.

'Since the beginning of June, we have had a tract of the moſt admirable weather ever remembered in this county; and, ſince the commencement of harveſt, there has been ſcarce a ſingle day to interrupt the labours of the important ſeaſon;—no ſhaking winds, nor rotting rains, nor chilling froſts, to blaſt the labours of the huſbandman. An uninterrupted courſe of near two months of fine drying weather in the

the time of harveſt, is a phenomenon in this part of the country, which is expoſed to the damps and ravages of the Atlantic Ocean. It will be unneceſſary to add, that the crop has been cut down and got into the barn-yard in the very beſt order; and from the kindly nouriſhing weather in the months of June, July, and Auguſt, there is every reaſon to ſuppoſe that the quality will be good. Any little trials that have been made, juſtify this opinion. From the ſevere ſhock, however, which it received in the months of April and May, the crop, in point of quantity, will not exceed an average one, if it ſhall amount to it; both the wheat and the oats being rather thin; as is the caſe alſo, in many places, with the turnips: But the ſuperior quality will probably compenſate for the defect in quantity. Grain markets have remained with little variation from the laſt quarter, though rather lower, upon the whole, than the high rents, price of labour, and additional public burdens, would require, in order to balance the capital and the trouble expended in agriculture, with the degree of riſk that muſt always attend it. With regard to the cattle and ſheep markets throughout this part of the country, there ſeems to be a total ſtagnation, and many graziers muſt no doubt ſuffer conſiderably. Various cauſes are aſſigned for this; and perhaps all of them contribute more or leſs to this depreſſion; ſuch as, the different banks contracting their credit; the ſevere drought in England leſſening the winter keep; and the ſtagnation in manufactures all over the country. The price of butcher meat is ſtill dear enough to the conſumer; but it would have been deſirable, that the ſhock had not been ſo ſudden; for when any one deſcription of people ſuffer, others muſt ſuffer with them, according to the old Latin adage, 'Nam tua res agitur, paries cum proximus ardet.'

*Letter from Falkirk, October 15.*

'Amongſt the numerous quarterly reports ſent you, I have regretted that there has not yet appeared in your Magazine one for Stirlingſhire, as it is a county of ſome importance in many reſpects. The corn market at Falkirk is one of the moſt conſiderable in Scotland; it may indeed be called the Haddington of the weſt. The diſtrict of the Carſe, in point of mere fertility, is not exceeded by any in the kingdom, and, even under its preſent management, produces weighty crops, and affords high rents. The annual cattle markets or tryſts at Falkirk, have long been reckoned the moſt conſiderable in Scotland. In caſe you may not, however, be furniſhed with a more general quarterly report for the county, I ſend you the following ſketch for this neighbourhood.

'From the almoſt unparalleled fine weather which has prevailed, I believe generally over the kingdom, the operations of harveſt have been carried forward with an uncommon degree of celerity, at the ſame time in a very ſatisfactory way, and are now completed in the moſt perfect manner. The moſt palpable ignorance, or inexcuſable indolence, could ſcarcely have gone wrong this year. The ſtack-yards have been all cloſed ſome time, and they afford a charming proſpect. Wheat is a

very good crop indeed; giving both abundance of ſtraw, and grain of excellent quality. It is generally allowed to be our beſt crop, and conſiderably to exceed an average. Very little ſmut has been obſerved: this however took place, to a very deſtructive degree, in the fields of one perſon, who had not pickled his ſeed, probably undervaluing this eſſential precaution. Beans are alſo equal to, or probably above, an average, and very good in quality. Barley is a very abundant crop, and in quality far ſuperior to that of laſt year, and indeed fully equal to the moſt fortunate ſeaſon of our variable climate. If the Legiſlature, in its wiſdom, do not adopt ſome effectual meaſure, founded on an unequivocal and broad baſis, to enable our Scots barley to maintain, according to its real value, a fair and equal competition, at leaſt in our own market, with that of our ſouthern neighbours, reared under a kindlier climate, the Scotiſh farmer will be driven, however reluctantly, to blot out altogether from his rotation this valuable crop. Some farmers have already ſubſtituted the potato oats in its place, and perhaps this year without much loſs. Where the land gets the ſame work as for barley, the young graſſes will be found to thrive equally well; and a heavy crop of theſe oats is not ſo liable to lodge, and to deſtroy them, as a heavy crop of barley under the ſame circumſtances, and they may be ſown as late in the ſeaſon. I adopted this plan myſelf this year. My oats were ſown the 20th of April, after three ploughings, and reaped the 20th of Auguſt; the graſs moſt excellent indeed. The late malt-tax is really a matter of the moſt ſerious conſideration to the landed intereſt of Scotland, and even moſt ſo to thoſe who poſſeſs the rich turnip ſoil, where barley follows with ſo much advantage.

'I cannot here help remarking, I had almoſt ſaid regretting, that the very ſuperior quality of our barley this year, may ultimately turn to our diſadvantage; becauſe, if an inquiry into the comparative value of the barleys of England and Scotland, as ſuggeſted in the Houſe of Commons, ſhould be inſtituted, I am convinced that we will come much nearer to them, than we would do on an average of ſeaſons; and therefore, though an apparently fair and impartial deciſion may be given, it will be really erroneous, inaſmuch as a different reſult would be the conſequence of ſuch a comparative trial in ordinary ſeaſons. In our northern diviſion of the iſland, we may not again have ſo much fun in one ſeaſon for the next half century. Oats are by far our worſt crop, and, unlike the reſt, are generally deficient, and, as far as I have learnt, inferior in quality to thoſe of laſt year. This is the more to be regretted, ſo far as reſpects the comfort of the labouring part of the community, as another article on which they depend much, is alſo very defective; I mean potatoes. They do not exceed half a crop: they were ſtunted, in the firſt inſtance, by the drought, and their growth checked by froſts; but, being taken up under the moſt fortunate circumſtances, they are of good quality, and will prove very nutritious.

'The young graſſes do not in general wear a promiſing appearance, although particular fields are very luxuriant. Hay was a very deficient crop. The price has, however, been low with us, as the Carron Company

pany and collieries, who are the great conſumers here, require a ſmaller ſupply than uſual, having a good deal of laſt year's on hand. The general price was ſixpence from the rick, but it is now rather dearer. There can ſcarcely be recollected a ſeaſon ſo favourable for conducting the fallow proceſs in the moſt perfect manner, as this has been throughout. Nothing but the moſt ſtupid inattention could have prevented a complete fallow; and yet this unaccountable ſtupidity was very apparent in many inſtances; whereas, in all clay diſtricts, a perfect fallow ought to be the ground of their hopes for ſeveral ſucceeding years. The wheat-ſowing is finiſhed under the moſt auſpicious circumſtances; and on many fields the braird is appearing

'Little grain has yet been ſhown in our market; the farmers being more intent on field operations during this uncommonly fine weather, than in thraſhing out. The prices may, however, be quoted. Wheat, 24s. to 27s.; Barley, 18s. to 21s.; Beans, 19s. to 21s.; Oats, 18s. to 22s.

'The tryſt this week, I believe, very much diſappointed the general opinion reſpecting the price of cattle, which was expected to be conſiderably lower, eſpecially of thoſe for turnips, the diſtillery, and the ſtraw-yard. They, however, as well as fat, maintained prices equal to laſt year. We cannot, therefore, reaſonably expect the butcher market to be lower for a conſiderable time.'

## *Murayſhire Quarterly Report.*

HOWEVER favourable the bypaſt ſeaſon may have been to the grain crops of other diſtricts, to this county it has proved peculiarly baneful. From the 7th June, till our harveſt was completed, we had ſcarcely a drop of rain, and none of conſequence ſince 19th April. The ſummer heats were all along exceſſive, often accompanied by ſcorching winds, extremely injurious to our ſands, light loams, and ſtrong clays. On ſuch, barley and oats are uncommonly deficient: they are only tolerable on moiſt rich loams. An ordinary ſeaſon admits of 10,000 bolls export from this county; while crop 1803, now that it is in the ſtack-yard in fine condition, will ſcarcely ſupply our internal conſumpt; and importation might be requiſite, were it not for ſome old ſtock on hand.

The quality of our wheat is excellent, in many inſtances not inferior to the produce of Eſſex, and may this year paſs off to advantage in Mark-Lane, where Scotiſh wheat ſeldom goes, but with loſs to the exporter. It comes pretty near an average in point of quantity; and now we are getting the new crop ſown in fine condition.

Turnips, although they have of late mended, are ſtill a thin deficient crop. Want of this valuable root, added to the ſcarcity of fodder, will be ſeverely felt by many; not only as it leſſens the immediate profit on cattle, but alſo the quantity of manure for next crop; without a large portion of which, our thin ſoils will produce nothing. In the mean time, it is ſo far fortunate, that now the demand for cattle has again come round at tolerable prices to the breeder, but with loſs to the grazier who bought in May and June.

Hay

Hay is plentier than might have been expected. There ſeems no want for the ordinary conſumpt of the county; and it may ſell from 15d. to 18d. per ſtone of 20 lib. Amſterdam.

For new grain, there is no price yet fixed. Old oats ſell at 23s. to 24s. per 5 firlots Stirling meaſure; barley at 20s. to 22s. 6d. per 4 firlots; but for this grain the ſale is, and muſt remain, extremely limited, unleſs a check is put to the importation of Engliſh barley, by a further increaſe of duty. Many cargoes have found their way to the Moray Frith; and diſtillers and brewers ſee their intereſt in uſing it, in preference to the country produce. Individuals are blamed for carrying on a traffic, ſo prejudicial to the agriculture of Scotland; but, while the Legiſlature gives toleration, it will be continued, though all the preſent importers ceaſed to exiſt.——*Oct.* 15.

*Letter from Glaſgow, 19th October.*

'Our harveſt has been exceedingly favourable, and all the corn has been ſecured in excellent condition, if we may except a few parcels about the Moorlands. Wheat proves a very fine crop, both in quantity and quality. Oats will be ſhort in the ſtraw, but will turn out well, both in the barn and the mill.

'Barley in this neighbourhood will be very good. The quantity ſown was trifling. Beans and peas are of excellent quality. Not much of theſe grains was ſown laſt ſeaſon with us. Potatoes have not turned out ſo well, neither in quantity nor quality, as was once expected.

'The market for wheat, ſince our laſt, has been on the decline. Oats have advanced a little. We have had little or no demand for barley, the diſtillers not having been at work for ſome time back, and our brewers having a conſiderable ſtock to begin malting.

'The importation into Clyde, this year, has been very great. Since the 1ſt July, about 21,000 quarters wheat, 10,000 barrels flour, 21,055 quarters oats (allowing 38 lib. to the buſhel), and 468¾ tons oat meal, have arrived from America and Ireland. The above wheat and flour, with a few more cargoes ſtill expected from America, will make a very good ſtock for the winter. We cannot help remarking, that the American wheat this ſeaſon is very poor in quality; conſequently, ſcarce a cargo arrives in good order; however, it is not ſo much hurt as to render it unfit for uſe; and, along with the fine wheat we have in this country, will make a very good mixture. A tolerable ſupply of oats is expected from Ireland and the ſouth of Scotland through the winter, ſhould the critical ſtate of the country not prevent it. Annexed you have a ſtate of our market.

'State of Glaſgow Markets, October 19th.

| | | | |
|---|---|---|---|
| 'American wheat, | 25s. to 28s. | of 240 lib. | per boll. |
| Iriſh ditto, | 26s. to 28s. | ditto | ditto. |
| Dantzic ditto, | 30s. to 32s. 6d. | Linlithgow meaſure. | |
| Britiſh ditto, | 26s. to 30s. | ditto | ditto. |
| Iriſh oats, | 17s. to 21s. | of 264 lib. | per boll. |

Engliſh

| | | |
|---|---|---|
| Engliſh new oats, | 22s. to 24s. | Stirling meaſure. |
| Ditto old barley, | 22s. to 24s. | |
| Scots ditto, | 15s. to 17s. | |
| Beans and peas, | 21s. to 24s. | |
| Oat meal, | 20s. to 21s. 6d. | per boll of 140 lib. |
| Ditto ditto, new, | 22s. to 24s. | ditto ditto. |

Hay, 7d. per ſtone Trou weight.
Straw, 4d. ditto ditto.
Beef, 10d. to 1s. per lib. of 22 oz.
Mutton, 8d. to 1s. ditto ditto.'

*Wigtonſhire Quarterly Report.*

THE preſent diſpoſition of the weather is uncommonly favourable for the wheat-ſeed. That which is already ſown has literally got a dry bed, for the duſt was flying after the harrows, as in April; ſo that we have reaſon to hope good effects will follow. Our potato crop, though in general three weeks later than uſual, will be very abundant; conſiderable quantities of which are yearly exported to England and to Glaſgow, and which, it is thought, will find a ready market. Our turnips, upon the whole, will be an equal crop, though perhaps not quite ſo bulky as laſt year's.

The fall on lean ſtock, and conſequent recent failures of a number of our cattle dealers, have given the farming intereſt a ſevere ſhock. There is no evil, however, in human life, but might have been worſe. One lucky circumſtance attends thoſe loſſes—there are but very few among us who are not able to bear them. Farmers of large capital, like the ſtately oak, can ſtand the ſtorm. It is thoſe only of ſmall capital, and great enterprize, that deſerve our commiſeration. And in theſe times of public diſtreſs, it is hoped the gentlemen of landed property will ſee it to be their *trueſt intereſt* to ſtep forward in ſupport of induſtry and enterprize.

With regard to *keeping* ſtock, very few ſales have taken place of late. At preſent, nobody wiſhes to buy; and nobody, who can do otherwiſe, wiſhes to ſell. At ſame time, it may be obſerved, that the demands for Galloway cattle of late years have been ſo great, and the prices offered to holders ſo tempting, as made many of them part with thoſe they intended to have kept another year; inſomuch that, excepting in ſome particular ſituations, only our young ſtock are on hand. Thoſe few farmers and graziers among us who hold *St Faith's cattle*, have ſet off to England at the head of their own droves; for, unleſs it be the Meſſrs Smiths and Meſſrs Corſans, who are drovers of large capital, few others, in the preſent ſituation of affairs, can be truſted. But when we look on our abundant crop of hay, large ſtack-yards, and ſpacious fields of turnips and potatoes, we have good reaſon *gatefully* to conclude ourſelves more highly favoured by '*the God of harveſt*' than moſt counties in the United Kingdom.

Good butcher meat ſtill maintains the uſual price, 6d. per lib., though inferior muir-mutton is ſelling at 4d. As it is thought the importation

portation of Iriſh grain will be but very limited this ſeaſon, prices of oats are rather looking upwards.

The newſmen are timeouſly calling upon the farmers to thraſh off all their grain; giving it as a reaſon, that the carriage *up the country*, in the event of French invaſion, will thereby be rendered more commodious! The writer of this report feels himſelf called upon, however unpopular the ſubject, to remark, that, at preſent, the price of corn bears, and for ſome time paſt has borne, no proportion to the advanced price of labour, land, &c. &c.: and therefore he does not ſee the ſmalleſt neceſſity for thraſhing *all off immediately*; more eſpecially, when it is to be conſidered, that our military forces are *now* fully ſufficient to repel any army the French Conſul can bring againſt us. Look around, I beſeech you, and behold what a vaſt body of brave volunteer corps, and faithful yeomanry troops, occupy our embattled plains! Add to theſe, our regular army, our militia, our army of reſerve. And ſay, what have we to fear? Contemplate this vaſt force united! And, ſurely, that mind whoſe confidence is not thereby fully reſtored, we may ſafely conclude to be under the cloud of melancholy. — *October 19th.*

## *Aberdeenſhire Quarterly Report.*

The drought, which ſet in early, continued with increaſed vehemence through the ſummer months; and the ſmall quantity of rain, which fell about the middle of Auguſt, being ſoon abſorbed by the returning drought, occaſioned crops of all kinds, with a few exceptions, to be much ſtunted. Here and there a few fields of early ſown bear were good; but the generality of that grain proved quite the reverſe, and of leſs bulk in the ſtack-yard, than ever remembered. Oats were alſo a poor crop, being thin on the ground, ſhort in the ſtraw, and of inferior quality. Peas were not abundant in ſtraw, but well podded, and yielding fine grain. Perhaps the ſtack-yards, on an average, are one third leſs in ſize than laſt year; but, as the harveſt was much earlier than common, and no damage received from wind or rain, the crop has been ſecured in the moſt perfect ſtate; and, in proportion to its bulk, will turn out uncommonly productive.

Potatoes are fine in quality, but rather deficient in quantity. Turnips, where the ſeed had vegetated early, are a good crop; where late ſown, or where the ſeed had lain long in the ground, they are of little or no value. Paſtures, of all deſcriptions, have continued bare through the ſeaſon; and the aftermath, or ſecond clover, is equally bad. The graſs ſeeds ſown in ſpring, preſent a bad appearance. Indeed, *keep* of all kinds for farm ſtock is ſcarce, and the appearance of plenty at as great a diſtance as ever.

Under the above adverſe circumſtances, the demand for cattle almoſt ceaſed about the beginning of harveſt; and prices came down nearly 20 *per cent.* For ſome weeks paſt, ſales have been made, and upon better terms. At Turreff market, this day, good beaſts ſold pretty freely. Butcher meat has fallen but little; and grain has rather advanced, beſt

oat meal felling at 20s. per boll. Very little field work is yet performed, it not being the cuſtom of this county to enter the plough till the harveſt is completely finiſhed. —— *19th October.*

## *Fifeſhire Quarterly Report.*

Perhaps in no ſeaſon has there been a longer continued tract of dry weather than in 1803; in conſequence whereof the hay crop was very light, and no ſecond crop of clover anywhere in this county. The vernal crops (wheat excepted) are very ſhort in the ſtraw; but well ripened and harveſted in excellent order. Wheat very fine, and gives well in flour. Barley, having in dry ground almoſt no ſtraw, is a deficient crop. On cold land, it is very good; but, in the county at large, barley, peaſe, and beans, are much below an average crop. The oats ſomewhat below, but not ſo much. Wheat is at leaſt one third above an average. A very large quantity of this grain is ſown on ground in fine order, which is looking very well, and the farmers are ſtill ſowing more.

Potatoes, in conſequence of want of rain in ſummer, though of good quality, fall ſhort in quantity, and cannot be taken at more than half a crop.

Turnips have univerſally failed all over the country, the very beſt not being half a crop. Whole fields, after ſpringing thick and beautiful, periſhed by the drought; the ſurviving plants are poor and ſtunted in ſize.

Flax is a ſhort crop, but of fine quality, and may be reckoned rather below an average; the ſeed is very fine, and much of it fit for ſowing next year.

From actual trial, Scots lintſeed, ſaved from ſeed once ſown from Holland, is found to produce a crop of flax equal in all reſpects to that from the beſt Dutch ſeed; but if not changed, it degenerates, and the crop will not a ſecond time equal the foreign produce.

Average price of hay 7d. per ſtone. No market for barley, and much of laſt year's crop remains unthraſhed.—*Oct. 20.*

## *Berwickſhire Quarterly Report.*

We have ſeldom experienced a tract of more favourable harveſt weather. Reaping commenced about the middle of Auguſt; and the crops in the low diſtrict were all got into the ſtack-yard, by the 1ſt of October, in excellent condition. The harveſt in Lammermuir, though latterly retarded by rain, is now alſo ſafely concluded.

From the warmth of the ſeaſon, and the uncommon drought, corn of every deſcription came ſo rapidly forward about the end of Auguſt, that a ſufficiency of hands could hardly be procured for taking it down in proper time. Reapers wages were from 1s. 10d. to 2s. 4d. per day, with victuals.

Wheat is very fine in quality, and will turn out better than an average crop per acre. Barley may be reckoned equal to an average, and

and the quality in general good. Oats prove a light crop, having ſuffered more from the drought towards the beginning of harveſt, than either wheat or barley; owing probably to ſo great a proportion of them being uſually ſown upon the lea furrow, a ſituation in which the ſoil is more expoſed to the influence of drought than almoſt any other; the grain is ſmall, and the returns per acre will fall rather ſhort of an average. Beans in general are an indifferent crop; peas are exceedingly ſifty. Upon the whole, though the crop this ſeaſon is, in ſome caſes, deficient in bulk, the aggregate return will probably exceed that of ordinary years.

Paſturage was ſo long at a ſtand from the drought, that the rains, ſince the middle of September, have made little alteration on it, being ſtill univerſally ſcanty. Young clovers are weak and backward, and have, in many caſes, been entirely burnt out. Good turnips have let as high as 8l. and 9l. per Engliſh acre. Of the late ſown fields, a great proportion are quite ſtunted; and thoſe of the beſt quality will not, this year, attain their uſual ſize; ſo that the general crop will be conſiderably deficient in weight. Potatoes have turned out a pretty middling crop, notwithſtanding the drought. Wheat fallows were prepared in the moſt complete ſtyle, and the early ſown fields have everywhere made a promiſing braird.

In conſequence of the little demand from the ſouth, prices of lean ſtock have experienced a very conſiderable reduction during this quarter: ſheep, in particular, have been ſelling 20 per cent. lower than laſt year. Fat has alſo fallen a little.——*Oct.* 21.

## *Tweeddale Quarterly Report.*

At the head of Tweed, and other waters in the higher pariſhes of this diſtrict, which are generally enveloped in too moiſt an atmoſphere, the dry ſeaſon was uncommonly favourable for the paſture; but in many places, there were complaints of its ſcarcity, particularly in the latter end of July and beginning of Auguſt. The hay crop has, however, turned out ſomething like an average, the price from the rick being 7d. and 8d. per ſtone; but white fodder being conſiderably deficient, the price may be expected to riſe, in the event of a ſevere winter taking place.

Potatoes were greatly retarded in their growth by the cold ſpring weather, and alſo checked by the early froſts in harveſt. Turnips have nowhere failed, though univerſally below an average crop. There are not many blanks, but the bulbs are ſmaller in ſize than ordinary.

The price of fat lamb did not fall during the ſeaſon. That of *crock ewes*, fold for turnip feeding, has declined of late at the rate of 25 per cent.; though, perhaps, the Falkirk riſe of black cattle may come round to ſheep alſo.——*Oct.* 22.

*Eaſt-*

### *Eaſt-Lothian Quarterly Report.*

If the quality of grain is to be determined from the quantity of ſaccharine matter therein contained, and if the quantity is regulated by the degree of heat which prevails during the ripening ſeaſon (poſitions generally admitted), then, it may ſafely be believed that the grain of the preſent crop will turn out as good as any reaped for many years paſt. Perhaps oats muſt be received as an exception, this plant being a kind of aquatic, requiring a conſiderable degree of moiſture in the ſeveral ſtages of growth, without which it cannot be expected to arrive at perfection.

From numerous trials already made, the truth of the above doctrines is fully exemplified. Wheat yields a great return in the barn, weighs heavier than in any ſeaſon remembered, and abſorbs a greater quantity of water than uſual; of courſe, a given quantity is of ſuperior value to the conſumer. The ſame may be ſaid of barley, where it was fully and equally ripened. Beans and peas are likewiſe of greater weight than uſual; but oats are much inferior to the growth of laſt ſeaſon; even the variety called potato oats, appears to have temporarily degenerated. All the grains, however, except wheat, are of ſmall bulk in the ſtack-yard, though it is preſumed the return per acre will not be far ſhort of the average bolls.

Independent of the injury received by oats from the exceſſive dryneſs of the weather, it deſerves to be ſtated, that myriads of black inſects or caterpillars infeſted this plant in the ripening ſeaſon, and in fact ſucked out the heart's blood thereof, which ought to have gone for the nouriſhment of the grain. Theſe inſects were more numerous on the majority of fields than even in 1800, and the conſequences would have been the ſame, had ſimilar weather prevailed in autumn. At that time, the grain dropped from the ſtalk upon the ſmalleſt motion; but the want of moiſture at harveſt, prevented the like loſſes as were then experienced. In 1785, the ſame effects were produced. Indeed, both theſe years, like the preſent one, afforded oats of inferior quality; conſequently returned a defective produce in bolls to the owner.

The turnip crop has ſuffered moſt ſeverely in this uncommon ſeaſon; and in no year, ſince the introduction of this root, have greater loſſes been ſuſtained by thoſe who raiſed it. Stunted originally by drought, the feeble plant fell an eaſy victim to the hoſt of caterpillars and worms that afterwards attacked it; and even fields that were thought to be out of danger, were obliged at laſt to give up. It would be an arduous taſk to attempt an aſcertainment of the loſs which muſt neceſſarily follow; for it is not the value of the crop itſelf which muſt be calculated, but the loſs of manure, the derangement of rotation, and the utter inability of breeders and feeders to carry on their ſtock: Theſe are things deſerving great conſideration.

Very little aftermath or foggage has been got this ſeaſon, which has not only occaſioned a great inconvenience, but even a heavy expence to many farmers. The grazier's trade throughout has been a bad one.

In few inſtances, was a full bite gained. Stock was high purchaſed; and the late depreſſion of prices, joined to the difficulty of keeping on, occaſioned great loſſes, eſpecially where ſheep were the prevailing article. Perhaps an advantageous turn may again be expected, the demand for butcher meat being ſo great in Britain, as to require, on the whole, a greater ſupply than can be readily afforded. A glut, ariſing from temporary cauſes, latterly took place; but this, it may be preſumed, cannot laſt long.

The market of Haddington has, ſince autumn, been fully ſupplied with grain, and the demand has born affinity to the quantity preſented. Oats, about the end of September, roſe in price with great rapidity, but have now come conſiderably down. Barley is in ſmall requeſt; and, notwithſtanding the goodneſs of its quality, threatens to be of leſs value than any other grain cultivated by the farmer. The immenſe revenue levied upon this article when uſed for malt, and the ſubſequent duties during every ſtage of its manufacture into ſpirits and ale, will account for its depreſſed value, when compared with that of other grains.

The ſowing of wheat very early commenced this ſeaſon, and has been continued under the moſt favourable auſpices. A greater breadth of ground will be occupied with wheat than cuſtomarily; the fineneſs of the weather, and failure of turnips, having enabled almoſt every farmer to extend the culture of this grain. It deſerves, however, to be noticed, that when early ſowing is practiſed, ſay in the middle of September, a great deal leſs ſeed, perhaps one third, ought to be uſed, than when the work is poſtponed to the ſucceeding month. Early wheat, if ſown thick, does not tiller in the ſpring; hence the ſtraw, owing to this miſtaken management, is ſmall, eaſily lodged, apt to receive mildew, and produces weak grain: all which things may be remedied by thin ſowing, when an early ſeed-time is adopted.

The clovers have planted badly; and in many places, the deficiency is ſo great, that it is unneceſſary to let them ſtand for a crop. Independent of the loſs ſuſtained in the firſt inſtance, a derangement of the ſucceeding rotation is an evil which cannot be avoided, and will occaſion croſs-cropping to a conſiderable extent.——*Oct.* 24.

*Mid-Lothian Quarterly Report.*

The harveſt in the lower part of this county began about the middle of Auguſt, and the crop was got into the ſtack-yards almoſt without a ſhower. The quickneſs of the work, however, occaſioned a correſpondent demand for reapers, and high wages were given in the Edinburgh market, and other places. So far all was fair; but, to the diſgrace of our police, a ſet of people were allowed not only to demand extravagant wages for themſelves, but to maltreat others, who had agreed to ſerve upon lower terms than thoſe fixed upon by the ſovereigns of the market. Some of the fineſt days for harveſt operations were thus ſpent in tumult and riot; an evil which calls for the ſerious conſideration of thoſe who have the power to correct it.

Notwithſtanding

Notwithſtanding the indifferent appearance of the wheats in ſpring, they ſuſtained the ſeverity of the drought better than other crops, and promiſe to be very productive. Conſiderable doubts, however, are entertained, that the oat crop is of a different deſcription, eſpecially what was produced upon light ſoils. Barley is unequal. Upon deep ſoils, in good condition, it is not only of fine quality, but will yield a plentiful return. Such fields as received much ſpring work, came up unevenly, and the produce is coarſe. Beans and peas are univerſally ſhort, and potatoes are very ſcanty.

From repeated obſervations, it is believed that thoſe farmers are moſt ſucceſsful, who truſt little to the ſpring time for cleaning their land. Should the ſeaſon be favourable, the young plants get a ſtart that enables them to combat adverſe circumſtances afterwards; but if the ſeaſon is unfavourable, ſeed work is executed with difficulty, and often to little purpoſe. This doctrine applies particularly to the barley fields, which often pay the farmer imperfectly, becauſe they have not been prepared in the proper ſeaſon.

Turnips hardly deſerve the name of a crop. Thoſe fields which ſprung equally, and withſtood the dry weather in the early ſtages of their growth, were aſſailed by the caterpillar in Auguſt, and very few have been able to withſtand the attack. Thoſe that remain are ſickly, have a fœtid ſmell, and ſhow bulbs not much larger than potatoes. Such a pitiful crop has not been ſeen ſince the introduction of turnips into this country.

From the want of after graſs, and the failure of turnips, both black cattle and ſheep have been puſhed prematurely into the ſhambles, which will operate ſeverely againſt a ſuitable ſupply at an after period. The laſt tryſt at Falkirk exhibited few fat cattle, but a conſiderable number of lean ones appeared, which went off at much higher prices than expected. The laſt day of the market had a greater ſale than the preceding ones, and all were ſold.——*Oct.* 21.

## ENGLAND.

*Letter from a Scotch Gentleman, dated Clifton, near Briſtol, July* 26.

'Since writing you laſt (p. 363.), I have made a long tour through the ſouth part of Suſſex, Hampſhire, Wilts, Dorſet, Devonſhire, Cornwall, and am now ſtationed, for the preſent, in Somerſet. To deſcribe ſuch a tract of country, where much is to be admired, and a great deal to be cenſured—where a proper ſyſtem of agriculture would double the preſent riches of the country—where nature, ſoil, and climate, have done ſo much, would require a much abler pen than mine. I ſhall endeavour, however, to give you a ſhort, but very inadequate ſketch, of the beautiful and romantic county of Devonſhire.

The boundaries you will ſee deſcribed upon the map of England, ſtretching from the Engliſh Channel on the one ſide, to the Briſtol

Channel on the other. Nearly acrofs the middle of the county runs the ridge of Dartmoor hills, high, bleak, and barren, fully as much fo as our northern Grampians. They ftretch from near the Engliſh Channel towards the Briſtol Channel, but do not join it; the country becomes lower, and is partly taken up with the foreſt of Exmoor, part of which is in Somerſetſhire. That part along the Engliſh Channel, conſiſts of beautiful valleys, running back from the ſea to the interior, bounded by high hills, and the country along the fine river Ex.

'The ſoil, in general, in the valleys, and on the ſides of the hills, is a fine deep brown, or reddiſh clay, properly mixed and tempered with ſand. On the banks of rivers or rivulets, the ſoil is deep, having been waſhed down and accumulated by the water. The tops of the hills are very barren, being covered only with whins or heath, and paſtured with ſheep. There are no ſurface ſtones, though in many places a ſtratum of rock or ſtone runs along below the ſoil, which covers it to the depth of three or four feet. Unleſs upon the ſides of the hills, the ſtone is of a ſoft open nature, being concreted ſand and clay, and penetrated by the waters, except towards Cornwall, where it is in a hard ſtate, and lies nearer the ſurface. As to their ſyſtem of agriculture, they have no fixed plan, each diſtrict differing, perhaps each pariſh. Their principal crops are wheat and barley, a few oats, beans, and here and there a ſmall field of turnips. Some farmers ſow clover and rye-graſs for hay; but the principal part of the hay here, as well as in moſt parts of England, is from natural, or what they call meadow-graſs. They principally perform their farm work with oxen, wrought either in the plough or the wain, in the old Scotch faſhion. The plough is a moſt clumſy inſtrument, with a ſmall wheel in the point of the beam; or, like the Suſſex plough, the beam reſts upon a low carriage and wheels, ſimilar to the carriage of a Norfolk plough, but lower. The plough itſelf reſembles ſomething of an ill-ſhaped Norfolk one, with a very long pointed ſock, a beam, and ſcarcely any mould-board. This awkward inſtrument cannot be expected to turn a very large or proper furrow.

'Their cattle are very handſome; much the ſame as the Suſſex cattle; the colour generally either a dark or light brown, with fine tapering horns. They are, however, narrow behind, and ill ſet upon the hind legs, which appears to me a great blemiſh in theſe otherwiſe handſome cattle. Their ſheep are of the Dorſet breed, but larger, from ſuperior feeding. This breed is ſo well known to you, from the county ſurveys, and the Engliſh writers on agriculture and ſheep farming, that I need ſay little of them. They are fine bodied ſheep, completely white, and generally horned, but rather long upon the legs. The Dorſet ewes lamb very early, uſually in the month of December, or beginning of January; and, in the diſtrict I am writing of, it is no uncommon thing to have graſs lamb at Chriſtmas, the ewes being fed upon the young graſs during the time the lambs are ſucking. Along with the richneſs of their ſoil, the excellence and earlineſs of the climate is ſuperior to any in England. Snow never lies there, not even upon the

tops

tops of the hills. They have no winter, unleſs ſometimes wet weather during the months of January and February.

'In the neighbourhood of Exmouth, I found an induſtrious intelligent Yorkſhire man, who, about ten years ago, ſettled there, and was the firſt that introduced the burning of limeſtone. The ſtone is brought from the oppoſite ſide of the bay, and the coals from Wales or Sunderland. The lime is of a fine white colour, and coſts nearly the ſame price as the Sunderland lime. The farmers are now beginning to uſe it upon ſuch grounds as they fallow. Wood of different kinds grows here to a large ſize. Myrtles, and many of our plants, which are confined to the green or hot-houſe, flouriſh in the open air with great luxuriancy.

'The banks of the river Ex, which is navigable for ſmall veſſels as far as Topſham, afford, in my opinion, the richeſt proſpect in England.

'Nature has ſhaped the grounds, and art has embelliſhed them with noble ſeats, villas, gardens, orchards, &c. It appears, for miles, as one continued garden or orchard. On the 16th July, when I paſſed, many fields of wheat and barley appeared nearly fit for cutting.

'After all this, it is a painful taſk to cenſure, particularly to a ſtranger who received many civilities. Would you imagine that, in ſuch a country, they have not what deſerves the name of a road, nay, ſcarcely of a foot-path? Many of the turnpike roads do not exceed nine feet in breadth; and, for miles, it is impoſſible for two carriages of any kind to paſs. A perſon is obliged to go before, to give warning for you to ſtop at certain places; otherwiſe a meeting becomes a dangerous buſineſs, as you cannot get off the road, the hedges being ten or twelve feet high. The roads run, in the ſame manner as they did five hundred years ago, over the tops of all the hills; as they ſeem to think it better to cut down a hill, than go round it. The roads are covered with enormous banks of earth, full of thorns, briars, brambles, and weeds of all kinds, under the name of a hedge, planted ſo full of trees that no loaded cart can paſs, if the load is higher than the top of a common poſt-chaiſe. You will ſcarce, then, believe me, when I tell you, that a great part of their work here is performed by horſes, with *packets* or *creels* affixed by a ſaddle to their back, in the ſame manner as in the moſt northern Highlands of Scotland. Even in the great city of Exeter, you ſee a poor horſe bending under a great load of brick or ſtone, affixed to his back by theſe means. Their coals, and, in ſhort, every thing, is carried in this manner upon horſes backs.

'Their fields, as in moſt parts of England, without any regard to the ſituation of the grounds, or conveniency of tilling them, are thrown into every ſhape the imagination can form, ſurrounded by immenſe banks, under the name of hedges, full of all the noxious weeds that can grow. Theſe are allowed to ſhed, and conſequently ſcatter themſelves all over the adjoining fields. This has often ſtruck me, in my travels through England, as a moſt ſhameful defect in their agriculture.

A man that allows such a nuisance, ought to be indicted for hurting his neighbour's property. I am obliged, at present, to conclude; but, at another time, will give you a few more observations upon this fine county.'

*Letter from Chester, September 24.*

'The harvest in this neighbourhood is now nearly finished; and I have the pleasure of informing you, that our crops are both abundant in quantity, and of excellent quality. Some little exception must be made in respect of oats, which are blighted in several places.

'Such wheats as have appeared at market, are the handsomest samples I recollect of having ever seen; and the current price is 8s. to 8s. 6d. per 75 lib. The dry weather will likely cause a great demand for oats and inferior barleys, as an additional quantity must be used in lieu of common provender; and so the price of these articles will keep up. None but the best qualities of barleys will be sought after by maltsters, on account of the heavy malt-duty. Inferior barleys will scarcely be saleable at any price, unless for the purpose already mentioned.'

*Essex Quarterly Report.*

Never was a finer season known for gathering in the harvest, than the last: there was not a single day's rain to interrupt it; and it has continued dry till within this month, since which time we have had some refreshing showers, which were much wanted for turnips, cole-seed, &c. Wheats which were injured by the worm in the winter, in a great measure recovered; but when in the ear, received a second check by the blight, which proved most injurious to the thin plants, and to those particularly (though thicker) on cold heavy lands.

The blight was however partial, and some have, no doubt, excellent crops; but as the quantity of straw is so great this year, the expence of thrashing is dearer, as it cannot be supposed the corn will arise in proportion to the bulk. Upon an average through the county, it is not thought that the wheat crop is defective. Barley and oats are fine, bright, and productive; as are peas and beans, which were not the least infected by the insect. Hops average from 8 to 12 cwt. per acre, and were sold at the late Essex fairs, from 5l. to 6l. per cwt. There was a piece of ground, of two acres English, at Castle Hedingham in this county, which produced 56 cwt. This was an extraordinary crop.

Turnips, owing to the dry weather, were long of appearing; and after they had been once hoed, the leaves were entirely dissected by a black caterpillar, which gave them a most singular appearance: after a time they began to shoot afresh, when the fly again attacked them, so that there are but few good ones. It may, perhaps, be worthy of remark, that manured turnips were throughout least affected by it; and in one field, where some were manured and some not, the latter were entirely destroyed, whilst the others remained nearly untouched.

The

The weather afforded a fine opportunity for making good fallows. Wheat ſowing has ſome time ago commenced; and, with the early farmers, the plants are making an appearance. Labourers are very ſcarce, in conſequence of the drafts for the army. In ſome caſes, 50l. has been given for men to ſerve for thoſe balloted for the army of reſerve. The rates, this year, in Bocking, will not be leſs than 30s. per pound, the war being the cauſe of the baize trade being nearly laid aſide. What a burthen is this upon farmers, who, when the trade flouriſhes, are not in the leaſt benefited by it? Very little ſtock was ſold at Braintree, nor Billericay fairs, laſt week. The prices were high; and the principal graziers unwilling to accede to them, the beaſts were brought up in good condition.——*October* 17.

## *Norfolk Quarterly Report.*

The harveſt was concluded, and the wheat ſowing begun under the moſt favourable appearances. Scarce a cloud intervened to interrupt the progreſs of the former; and ſuch has been, ſince the concluſion of it, the happy variations in weather, from dry to moiſt, and *vice verſa*, that the drill, the dibble, the plough, and the drill-roll, are all actively and well employed. There has been ſufficient drought to allow time for cleaning the fallows; and lately, a ſufficient quantity of moiſture, to allow the breaking up of the graſs, or, as they are called in this country, *orlands*; a corruption, I preſume, of old lands: and before the expiration of this month, wheat ſowing will be very generally completed.

The barley crop of this year was certainly very great upon the ground, and promiſes to be productive in the barn, and of ſuperior quality, both as to colour and weight. The pea and oat crop are alſo plentiful. Wheat is extremely bad; not one half of an average crop, and unuſually thin and defective in weight. Many acres were cut down, merely to litter the yards, and to be thrown to the hogs. I ſhould ſuppoſe the average weight cannot exceed, if it can equal, 55 lib. per buſhel. Beans are not much grown in this diſtrict; but where they are, they are good in quality, but will be ſhort in quantity. The turnip crop is extremely partial, and generally defective on the good wheat ſoils; and ſcarce one acre in twenty has come to the hoe. The artificial graſſes, on which, in this country, we depend principally for our hay, were ſhort and unproductive. This ſcarcity of food has occaſioned a very conſiderable decreaſe in the price of cattle. Lambs were bought much cheaper at the late fairs, than they were ſold laſt year; the prime not averaging more than 17s. per head. Pigs are 50 *per cent.* cheaper than they were three months ſince. Norfolk wool was ſold for 48s. per todd, and the South-Down as high as 52s.; and long wool is now ſelling at 30s. to 31s. per todd. The preſent price of wheat is from 42s. to 60s. per quarter. Barley, 22s. to 23s. Oats, 20s. to 24s. White peas, 48s. to 50s. Grey peas, 34s. to 36s. per quarter. The late very heavy additional duty on malt certainly contributes much to depreſs the price of barley; and I confeſs I am perſuad-

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ed the profpect to the agriculturiſts is not at preſent very encouraging, though the rage for hiring farms does not yet appear to have much cooled. The preſent price of grain, I am confident, cannot allow the farmer a living profit on the capital employed.——*October* 18.

*Letter from a Farmer in Wales, October* 18.

'Since I wrote you in July, we have enjoyed a continuance of dry weather, and, of courſe, a moſt favourable harveſt. In the lower diſtrict, reaping commenced in the firſt week of Auguſt; and, by the firſt of September, nearly the whole crop was ſafely ſecured in the rick yard. Wages for reapers went very high; no leſs than 2s. 6d. and 3s. per day beſides board; and, when cut by the piece, 6s. per acre, together with board, was paid for merely cutting and laying down. Barley and oats are uniformly cut with the ſcythe; but hooks are uſed for wheat, though ſome people have lately tried the ſcythe for this grain, our mode of reaping by the hook being ſhamefully negligent. The crop is of inferior bulk to the preceding one; but the grain is generally of good quality, the major part of oats excepted: theſe are ſmall, of a bad colour, and tough to thraſh; though before harveſt they had an excellent appearance.

'The dry weather impeded the growth of our turnip and potato fields. Our hay crop was good; and a large ſtock of laſt year's produce being in hand, it is to be hoped that ſufficient provender will be found in the diſtrict for ſupporting the beſtial. The graſs grounds, even thoſe of the beſt quality, are quite burnt up, which occaſions many people to reſort already to hay for ſupporting the working oxen. During the laſt three months, the prices of cattle have dropped greatly, owing, as I preſume, to the ſcarcity of graſs in the Engliſh feeding counties; and many breeders and graziers have given their ſummer graſs for nothing. The ſame with ſheep. Pigs are hardly worth one half of their laſt year's value; but butter and cheeſe are higher than ever known. Wheat is ſlow of ſale, owing to the want of water at the mills. The ſowing of this grain is far advanced; and with many farmers it would have been finiſhed, had not the ſeverity of the drought interdicted the ploughing of clover leas, eſpecially where the ground is of a ſtiff or obdurate nature.'

*Northumberland Quarterly Report.*

For the laſt three months, the weather has been almoſt uniformly dry. The only rains that have fallen in that period were in the firſt week in Auguſt, the third week in September, and the beginning of October. The firſt came very opportunely for ſaving the turnip crop, and for reſtoring vegetation to the graſs lands, the paſtures being at that time completely eat up, and cattle in the greateſt diſtreſs for want of food. The ſucceeding dry weather was peculiarly favourable for the harveſt. Crops of all kinds were probably never better ſecured; and there having been no high winds to occaſion any ſhake, they were never got

got in with leſs loſs. An excellent opportunity was alſo afforded, by this dry ſeaſon, for completely cleaning the wheat fallows; and the rains in the third week of September reduced them to the fineſt tilth poſſible; and the wheat ſeed, both on the naked fallows and drilled bear ſtubbles, was never put in under more favourable circumſtances.

The wheat fields were generally thin, having been much injured by the winter froſts; but the continued dry weather through the ſummer, favoured this crop very much. Few inſtances of any diſeaſe, blights, &c. appear; and no defective parts in the ear, the grains being all completely perfected, and the ſamples remarkably fine.

The barley and oats were injured in dry ſoils by the drought, and are below an average crop; but the quality of both is good, though rather ſmall in the grain; the ſamples are beautifully fair, and particularly proper for the London market, to which the greateſt part of our beſt oats are generally ſent. The peas and beans were ſhort in the ſtraw, but well podded, and may be reckoned nearly an average crop.

Turnips ſuffered materially from the extreme drought, upon all dry ſoils; and though the rains in the beginning of Auguſt were the ſalvation of a great many crops, yet there were many others that did not recover the check they had received, and afterwards became mildewed. No doubt there are ſome remarkably good ones, yet it is generally conſidered that turnips are below an average crop; and ſuch as are good are now ſelling from 8l. to 9l. an acre. Potatoes are alſo conſidered as a failing crop.

The markets for live ſtock are ſtill very good, though ſomething lower than the prices of laſt year. Beef is expected to be a ſcarce article next ſpring, and is already advancing. A number of buyers appeared yeſterday at Wooler fair, and prices revived, to the great ſatisfaction of our ſheep breeders.——*October* 18.

*Letter from a Yorkſhire Farmer, October 20th.*

'The dry weather greatly injured our turnips, and the crop will be very indifferent, though the late rains have improved them in many places. They have been ſold as high as 7l. 10s. per Engliſh acre, to be eaten with ſheep upon the ground. Our hay crop is good, and well got; but, as we have no after-graſs (fog), and as many people are already under the neceſſity of giving hay to their cattle, prices may ſoon be expected to be high. The wheat crop is good; ſo is barley: but oats and beans are ſuppoſed not to be equal to one half of laſt year's crop. A good deal of wheat has been put in upon the fallows; and we are buſy preparing the clover leas. Wool is on the advance; but every other thing appears to be lowering,—rents, wages, and taxes excepted.'

*Yorkſhire Quarterly Report.*

We have had another remarkably fine harveſt; but the weather, from the exceſs and long continuance of the drought, has been by no means ſo favourable to the farmer, during the latter end of the ſummer, as

might

might have been wiſhed. Dry weather is generally moſt favourable to the leading crop, wheat; which, accordingly, is thought an unuſually abundant crop: yet, ſo great a proportion of that grain has ſuffered materially from the mildew, that it cannot yield, on the whole, that product, both in reſpect to quality and quantity, that was promiſed by the very flattering appearance of the crops in their earlier ſtage of ripening. However, many good ſamples are ſhown in the markets, which, notwithſtanding, do not command a price by any means adequate to what might very reaſonably have been expected from the great number of thoſe of inferior ſorts.

Barley and oats are fair average crops; but beans are very defective in general. Potatoes are not half a crop. Beſt wheat 7s. 6d; barley 4s.; oats 3s. 6d.; beans 6s. per buſhel of Wincheſter. Potatoes 4s. per buſhel, upheaped. Apples 2s. to 4s. per peck; yet the latter are abundant in produce.

Rape was not ſown in any great quantity in this diſtrict, but was tolerably productive of ſeed—the price about 40l. per laſt. Flax was a good crop, and well crowned with ſeed, which ſells at about 12s. per buſhel.

The unuſual dryneſs of the ſeaſon has rendered the complete fallowing of ſtrong ſoils a perfectly eaſy operation: but, from the ſame cauſe, the produce of the turnip crop will be ſcarcely adequate to one third of the common average. The better ſort, though ſmall in root, are ſelling to the ſtock-maſters and jobbers at five guineas per acre: an excellent price to the grower. We have lately had a moderate ſupply of rain; ſince which, much wheat has been ſown in very good order, and in ſome fields it already begins to appear in blade. The young ſeeds are not of ſo ſcanty a ſward as was expected; but there is little or no graſs either in the paſtures or meadows. The proſpect is rather gloomy to the ſtock-farmer, as a very poor price is offered for ſuch ſtore cattle and ſheep, as he cannot find means of ſupporting through the approaching winter.

Cattle and ſheep for ſtore are rapidly declining in price. Hay as rapidly riſing, and now ſelling from 6l. to 8l. per ton. Fat cattle and ſheep are alſo lowering. Beſt beef 7d. to 8d.; Mutton, Veal, and Pork 6d. to 7d. Butter 1s. 6d. per lib. avoirdupois.——*Oct.* 20.

*Letter from London, Oct.* 24.

'On inquiring, I find that the bean crop, which was generally allowed to be a ſmall one, turns out better in ſeveral diſtricts than originally expected; but ſtill it will be defective. Peas, on the whole, are alſo below an average; but the grey varieties of this grain, lately offered at market, are of excellent quality; and the ſupply of both greys and boilers was laſt week greater than we have for a long time received. The account of barleys is ſtill very favourable, and the produce preſented is of a fine quality. Wheat is not ſo generally hurt by blight and mildew, as was reported. The crop of this grain is large,

# SUPPLEMENT

TO THE

# FARMER'S MAGAZINE:

WEDNESDAY, 21st DECEMBER, 1803.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*On Thrashing Machines.*

SIR, LETTER II.

IN my last, p. 128, I attempted to elucidate the history of that valuable implement the *thrashing machine*, and made a few remarks on the improvements suggested thereupon by your correspondent, A. G. (vol. III. p. 428.) which I considered as of small importance either to farmers or mechanics. Allow me now to finish these remarks, and to shew, that thrashing machines of a small size, such as are recommended by A. G. are a real and positive loss to the farmer, and that the flail is preferable to these weak, and comparatively powerless implements.

Your correspondent, speaking of his water machines, says, that 'where the situation of the ground would admit, 'I would propose an inner wheel of eight feet diameter, 'mounted with cast iron segments containing about 200 teeth, 'and that this should turn a pinion attathed to the end of the 'skutch containing about 7 or 8 teeth,' (which by the bye is too small): and adds, that 'the first motion communicated 'by water, or a horse, will require to be slow,' but does not explain the degree of slowness necessary; for want of which I cannot discern any utility in the observation. It is clear, that on the velocity of the first moving power, the whole effect of machines, individually considered, must depend, and that any errors committed in the original construction, can hardly

afterwards be completely rectified. Great mistakes have arisen in erecting machines, from not knowing, or not attending to the velocity which the moving power ought to have, so as the greatest effect might be produced. In an overshot wheel, the greater the velocity of the wheel, the less will be the effect of the moving power, as water only acts with a relative force; for heavy bodies falling only 16 feet in the first second of time, it is evident, that if the circumference of the wheel was moving at that rate, the water would have no effect upon it. On the contrary, when the wheel is standing and the buckets filled, the water then acts with its whole weight; so of course there must be a certain velocity of the wheel, where the relative weight of the water will produce the greatest effect on the machine, or do the greatest quantity of work in a given space of time. If your correspondent had pointed out what this velocity ought to be for wheels of different diameters, he would have performed a most essential service; but by giving dimensions of wheels and pinions, without mentioning the just velocity, or even any velocity of the moving power, no benefit can be derived from his several calculations.

What I have said respecting water machines is equally applicable to those wrought by horses. There is a certain rate per hour at which horses ought to move, beyond which they ought not to be driven; and from this rate, all the other movements fall to be regulated. Here I may notice what your correspondent says concerning long levers. He says, that *if the lever is increased one-third in length, one horse will perform nearly the same work as two;* but I am afraid that if any of your readers build their faith upon this statement, they will find themselves miserably deceived. In very small circles a horse draws within the tangent to the circle, and there is a loss of power in the direction of the draught, and an increased pressure upon the axis; but in such circles as are commonly used for thrashing machines, the deviation of the draught line from the tangent is so very small, that the loss of power is trifling. This is not a matter of opinion, but admits of mathematical demonstration; as also the consequences produced by increasing the length of the lever, it being a well known principle, that whatever is gained in power is lost in time. From these things suffer me to remark, that the observations of your correspondent have not been duly considered by him; for instead of conveying instruction, they really tend to mislead.

I am also inclined to think that there has been some mistake in what he relates concerning the power of a fly on the end of the

the skutch, and believe that whenever the experiment is accurately repeated, the result will be found different from what is stated.

I shall now proceed to the last point in view, and shew, that thrashing machines of small size are a real and positive loss to the farmer; and that the flail is preferable to these weak, and comparatively powerless implements.

Here I may remark, that your correspondent appears a warm advocate for small machines, but neglects to describe a single benefit which can be derived from such erections. Thrashing machines are undoubtedly beneficial to the farmer, 'both as 'a saving of time, and manual labour, and also on account of 'the superior manner in which they detach the whole grain 'from the straw:' but whether these objects are to be gained by employing machines wrought by one horse or two horses is not to be learned from the paper under consideration. To me it appears, that no saving of time or labour can take place from such erections; and it may be safely questioned, whether grain can be separated from the straw in a superior manner by the strokes which they are capable of giving.

Whatever be the size of the machine employed, it is obvious, that, at all events, one man is required to feed it, and that another, or at least a boy, is required to drive the horse, or horses that are yoked to the implement. In these instances the like expence is incurred, whether one horse or six horses are employed, which makes a difference in favour of the large machine of at least twelve shillings and sixpence each day it is employed; seeing that an equal quantity of corn will be thrashed by it in one day as is done by the other in six days, and probably the separation will take place in a more complete manner: To this must be added the saving gained below stairs in the wages of those employed to remove the straw and riddle the grain; for you must have one man or woman for each of these departments in the smallest machine, and two are quite sufficient for the largest that is used. A like difference perhaps arises in the wages of those employed to open out the corn, and hand it to the feeder; all which, when added together, will amount to more than twenty shillings upon every fifty bolls of grain thrashed in favour of the large machine, even admitting that the work is equally well done in both cases.

I am aware, that though the above statement sufficiently proves the superiority of large machines over small ones, yet still it does not make out that the latter are a loss to the farmer,

mer, or that the flail is the preferable implement. This subject shall therefore now receive my attention.

Your correspondent says, that 'in Leicestershire, where 'the power of a horse has been added to these small machines, 'they will thrash about a quarter of corn in two hours, and 'that they are there found to answer for moderately sized 'farms.' The quantity here given does not exceed fourteen pecks per hour of all grains, but taking it at a boll, which I believe is very near the truth, I have a foundation on which the following calculations may be built.

I have already shewn, that twenty shillings on every fifty bolls of grain thrashed is lost to the farmer who uses a small machine, in the single article of wages; and shall now state the relative expence of thrashing by a small machine and by the flail.

In the case of the Machine.

| | | | |
|---|---|---|---|
| Value of horse labour for one day - - | | £. 0 4 | 0 |
| A boy to drive - | | 0 1 | 0 |
| A man to feed the machine | | 0 1 | 6 |
| A woman to riddle the grain | | 0 0 | 7 |
| A woman to open out the sheaves - - | | 0 0 | 7 |
| Prime cost of the machine | £. 35 0 0 | | |
| Interest upon this sum at ten *per cent.* | £. 3 10 0 | | |
| Tear and wear per annum | 2 10 0 | | |
| | £. 6 0 0 | | |
| Suppose that the farm upon which the machine is wrought shall produce 300 bolls of grain per annum, which, at 8 bolls per day, requires thirty-two days and an half to thrash it; *inde.* the interest of capital, and tear and wear amounts per day to - - | | £. 0 3 | 8 |
| | | £. 0 11 | 4 |

Which

Which, upon the supposition that eight bolls are thrashed per day, as stated by your correspondent, amounts to one shilling and fivepence per boll. Now, as corn can be thrashed by the flail at less than one shilling per boll on an average, the loss attendant upon small machines does not require further demonstration.

I may here add, that from an attentive examination of many thrashing instruments of different powers, I am satisfied that a boll per hour for every horse employed, is a fair average calculation of the quantity of grain thrashed by these machines. No doubt but that, in particular seasons, with short straw and fine grain, a greater quantity will be beat out, but still, as a general principle, the above may be held as nearly equal to the ordinary produce. I have seen fifteen bolls thrashed in *one* hour with six horses, but always found a great deduction must be made when a regular journey is taken, independent of the waste of time which unavoidably happens. In some seasons, also, the straw is so long, and the grain so unproductive, that few people, who are in the habit of managing these machines, will call in question the propriety of assuming a boll per hour for every horse employed as a fair result of thrashing machine labour; I am rather afraid, that some will consider it as exaggerated.

I have hitherto argued the question, as if small machines were capable of separating the grain from the straw in a sufficient way. As this however is a matter of dispute, and concerning which I am not altogether satisfied, allow me to state my sentiments in a cursory way, and to express a wish that some of your correspondents, practically concerned in the working of such machines, would correct me when I am wrong, and elucidate the subject with more perspicuity.

In my last letter it was stated, that a velocity not less than two thousand feet per minute of the circumference of the drum, or cylinder, was required to ensure perfect thrashing, and that the best machines even exceeded that pitch considerably: Now it strikes me, that a small machine is uncapable of sustaining such velocity, at least those I have inspected were neither wrought at that rate, nor were they calculated for it in any single point. To give velocity to a machine slenderly constructed is almost physically impracticable; at least, if given, the machine is exposed to utter destruction, a circumstance deserving much attention in the construction of every machine, whatever be its size.

According to the ideas which occur to me upon the subject, two things deserve attention in the construction of small machines, in order to render them, if not profitable implements,

at least capable of threshing sufficiently, though at an increased expence. These are either to shorten the cylinder in a proportionable degree to the extent of the impelling power, or to lessen its diameter, which will allow every other part of the fabric to be in like manner diminished. This last mode has hitherto been resorted to in the construction of small machines, though I am not sure but that the principle, upon which it is founded, is erroneous; at any rate, it can only answer where the unthrashed grain is thinly passed through the feeding rollers, as the closeness of the beaters would choke the cylinder, and impede the operations of the machine. The other plan I think better of, *viz.* to reduce the length of the cylinder exactly to the force employed to work the machine, in which way as much velocity may be safely used as is practicable with machines of the largest size, provided that the other parts of the work are constructed in a sufficient manner. According to this plan, the cylinder ought to be of the usual diameter, but not to exceed 15 inches in length for a one horse power, and proportionally more, as the draught is augmented. With such a cylinder you may feed as thick in as is commonly practised, and you make up in thickness of feeding for the increased breadth occupied upon the board when the diameter is only reduced. Such a cylinder would stand more fatigue, and be in less danger of breaking, than a long slender one. To be sure it would be an aukward business to see it at work; but be this as it may, it appears to me that such would be the cheapest in the first instance, and the durablest of all small machines; though in point of profit, I believe they are all in one predicament.

I ought to have noticed a circumstance which renders the flail superior to small machines, and that is, that where hand labour is used for thrashing, an inconsiderable part of the sheaf is thrashed, whereas, in passing through a machine, every inch of the straw receives the same beating as is given to the ear, where the grain has its residence. This, especially when strong rank wheat comes to be thrashed, is a matter of great importance. The thrashing of the whole straw certainly occasions an extra quantity of produce, but this can only be profitably gained by using powerful implements; for where small ones are used, the increased produce is eaten up by the increased labour. Upon a farm of small size, where only one or two ploughs are kept, the occupier often thrashes a good deal of the grain himself, at least he has it in his power to examine every truss of the straw; none of which things can possibly happen where the concern is extensive. Upon small farms, such as are of the size condescended upon by your correspondent

dent, machines cannot be used with advantage, and seldom will they make a greater return than is gained from the flail under the circumstances above alluded to.

Perhaps upon every farm where six or more horses are regularly employed in field labour, machines may be advantageously used. The quantity of grain raised in such situations becomes an object of importance, sufficient to induce the occupier to erect a machine of considerable powers. In fact, the difference of expence lies all in the original outlay, which in few cases can exceed forty or fifty pounds, and is soon reimbursed by the after savings. I believe that every person, really conversant with thrashing machine work, entertains ideas of a similar kind; for small machines seem to be sought after only in those districts where machinery has been recently introduced, and are soon given up in favour of more powerful implements: even Cotterel's gigs got footing in East Lothian at an early stage, though it is not consistent with my knowledge that one of them now remains.

The most useful and thrifty machines are those that require a complete set of hands to work them, where none are idle, but all properly occupied, and so arranged as to carry on the work regularly. The feeder being the most expensive of the whole, it is a primary object to have the cylinder of sufficient length to match the compass of his arms; in general cases, four feet and an half is the size adopted, few men being capable of spreading the unthrashed corn over a board of greater bounds, especially if the straw is short. The other hands required are two women to riddle the grain, and take charge of the fanners; two boys to open the sheaves and hand them to the feeder; two men to remove the straw, and one to drive the horses: These I call a complete set of hands. If the work is such as to require fewer, a loss is sustained in some shape or other, and seldom is a greater number necessary to manage the several departments.

I must confess I felt surprise at your correspondent speaking so much concerning hand machines, as every attempt of that nature has altogether failed. One of my friends in England believed that he had hit upon a proper plan for a hand machine, and in 1795 actually took out a patent for the invention. He was, however, soon convinced that he had committed an act of folly, and after being a round sum out of pocket, fairly acknowledged his error. In truth, no hand machine is adequate to the arduous task of separating corn from the straw: If a horse power is substituted, I do not entertain a doubt but that thrashing may be executed; though, on the other hand,

I am equally satisfied, that the attendant disadvantages will effectually prevent such from being generally used.

Before I finish, permit me to give a word of caution to such as have in contemplation to erect a machine, and are unacquainted with the several operations. In many instances good machines have been entirely spoiled by improper management; therefore, a thorough bred feeder should in the first place be sought after. The feeder is, in fact, the director of the whole work, and according to the degree of knowledge and activity he possesses will the success of the undertaking be regulated. A corn miller is thought to require a kind of apprenticeship before a mill is committed to his care; but a thrashing miller is often taken from the plough, and entrusted with an office that requires as much, if not more knowledge and dexterity. In a word, much loss has been sustained from employing unexperienced hands. This was sensibly felt at the outset, and must still take place in every district, though perhaps in a less degree, where machines are not customarily used. The feeder's office, simply considered of itself, is not a difficult one, but when it is remembered, that the care of the whole machinery lies upon him, it will at once be acknowledged, that a servant of superior abilities ought to occupy that office, especially in the case of new erections. In England, where, except in the northern and eastern districts, the thrashing machine is hardly known, the above caution may be particularly useful; for I have it from good authority, that there even a pair of fanners were laid aside, merely because the people employed to work them did not know how to place the riddles and to temper the implement.

Thus I have given you my impartial opinion of your correspondent A. G.'s communication; and am sorry to add, that I cannot discover one fact or observation therein, which throws light upon the history of thrashing machines, or which encreases the general stock of knowledge already possessed by the country, respecting that valuable implement.

I am, Sir, yours, &c.

ARATOR.

*P. S.* In case of objections being made to the charge of 10 per cent. on the first cost of a thrashing machine, when an allowance is given for *tear* and *wear*, I think proper to add, that as one half of that charge is required to defray the ordinary interest, the remainder will serve as a stock-fund, whence a new machine may be erected, when the old one is worn out; the allowance for *tear* and *wear* being merely intended for defraying the expences of repairing the implement, which, in many cases, are considerable.

TO

FOR THE FARMER'S MAGAZINE.

## *Account of the district of Lammermuir, in East Lothian, drawn up in* 1794, *from the communications of several Farmers.**

THE southern part of East Lothian is hilly and mountainous, and usually called Lammermuir. This district, on the east, commences a little to the westward of Old Hamstocks, and runs from east to west, almost the whole length of the county, part of it even stretching into the County of Mid-Lothian. It may be about 18 miles in length, and from two to eight miles in breadth.

The general soil is muir or moss, mixed with earth, in various proportions. Upon the top of Lammerlaw, Hopeshill, Mayshiel, and other high grounds, the soil is almost intirely moss; and where it predominates, few plants except heath are to be found. In lower situations, where there is a greater proportion of earth, grasses of various kinds make their appearance; but the moss has hitherto baffled all the attempts of the husbandman. In soils where it prevails, even after a complete dressing of Lime and Dung, the most flattering appearances have ended in an abortion. Sanguine expectations of improvement are, however, entertained at this time from Philosophy and Chemistry, generously advancing to the aid of the husbandman; and it is to be hoped, that this soil, which has been hitherto considered as perfectly unimproveable, may, now from the assistance of such powerful auxiliaries, be rendered valuable to its proprietors.

The climate of the district, from height of situation, is backward and cold. In winter, the whole face of the country is covered with snow, which, in some seasons, will continue for two or three months. The farmers are then obliged to feed their sheep, to prevent them from starving; and often to remove them to the lower parts of Lothian and Berwickshire. In the spring and summer months, a great deal more rain falls there than in other parts of the county. High winds are also frequent, or rather, from the face of the country, are attended with dangerous consequences. Under all these circumstances, it need hardly be observed, that the Lammermuir Farmer struggles with numerous difficulties, and that his situation is extremely hazardous.

The property of this district is divided amongst eighteen heritors, none of whom reside within its bounds. The size of farms is much the same as they have been for a century past;

* This paper was originally intended for the East Lothian agricultural survey, but for reasons unnecessary to be mentioned, was afterwards withdrawn.

past; and considered as store farms, are certainly too small. Few can conveniently keep three flocks, which is reckoned the most advantageous mode of breeding; and those, who attempt it, have their flocks so small, that much unnecessary expence is incurred from herding them.

The quantity of ground that has at different times been under the plough is so great, that it is hard to say, unless it was to extirpate the heath, what could be the inducement. In wet seasons the corn crops seldom arrive at maturity. In 1782 heavy losses were sustained from a total failure of the crop, which, in many places, was not thought worthy of being thrashed.

The grain principally cultivated is oats, different kinds of which have of late been introduced, and these, from ripening more early, have been of material advantage. The new varieties are, 1st, Red Oats, which are good in the grain, and do not easily shake. They require the ground to be in good heart, or the straw will be scanty, but where proper cultivation is attended to, they are a great acquisition in a late climate. 2d, An early sort of White Oats has lately been brought from the neighbourhood of Carnwath, which do not require so fine a culture, and yield more straw. They are not the best grain, but from being very prolifick the deficiency of quality is amply compensated.

The dependence of the Lammermuir farmers is, however, upon their sheep flocks, which of course engages their principal attention. The kind bred, and perhaps best adapted to the pasture and climate, are the black faced sheep, carrying wool of superior quality to the Tweedale sheep. However much the different kinds of fine wooled sheep may suit in favourable climates, and richer pastures, yet it is presumed the present hardy and active breed will be found most profitable upon such grounds as Lammermuir. At the same time, trials are making of the Cheviot breed, and it is said with a promising appearance of success.

It is always the wish of every Lammermuir farmer to have his sheep divided into three flocks, if the size of his farm will admit, and a distinct portion of ground set apart for each. *1st*, The Ewe flock, for whom is appropriated all the lowest and best grass fields: at the same time, it is reckoned good management, to allow them once a-day, to go to the heights, '*where the heather grows*,' in which they seem to take great delight. The force of custom is so strong with these animals, that, when once used to this poor plant, they will of themselves draw off once a-day to it from the best grasses. Allowing them to do so, is supposed to rear the healthiest sheep, and best feeders.

*2dly*, The

2*dly*, The Hogs, or weaned lambs, demand the farmer's next attention. These require a deep earthy field, covered with strong grass, which will stand a considerable degree of frost before it breaks down. This is provincially styled a *hog-fence*, and is saved from the middle of June to the middle of August, at which time the Lambs are removed to it.

3*dly*, The coarsest and lowest grounds are by these means reserved for the *yeld* Sheep, viz. Dinmonts and Wedders; and each of these flocks require an experienced shepherd to attend them.

About the 12th of April is the time the Ewes generally begin to Lamb. At that time particular attention is necessary, as the Ewes from weakness, often stand in need of assistance, both upon their own account and that of their lambs. When the lambs are three weeks old; the males are castrated, reserving a few of the best for Tups. About the end of June, the whole sheep are washed and clipped; and the lambs are weaned and sent to pasture upon a portion of ground saved from the Whitsunday for that purpose, where they remain till removed to the ground reserved for their winter pasture. When the sheep are to be washed, great care is necessary not to overheat them when driving to the pool; as fatal effects are often occasioned to flocks by plunging them too warm into the water.

About the first of November is the time when the sheep are smeared; the salve used for that purpose, is 1 pint of tarr, and 2 pounds of butter, for 8 or 9 sheep. The farmer is attentive to have this operation carefully performed, from a dread of the hazardous consequences of an imperfect salving.

The draft ewes are sold sometimes in the month of October, but most generally during the spring months. Every farmer, who wishes to have good stock, pays particular attention to this business, and sells, alongst with his old ewes, all those he reckons ill shaped, or carrying coarse wool. By attention to this, and a careful selection of proper rams, a few years perseverance produces great alterations in a flock.

The Wedders are likewise sold about the first of April, to make room for the hogs, which are then sent to the *yeld* flock; the ewes, requiring both the hog pasture and their own, while the lambs are upon them.

From the 10th May to the 10th October, the ewe flock is folded during the night, but the other flocks remain, the whole season, upon the open pasture of the high grounds. The ewes are milked, from the time the lambs are taken off them, till about the middle of August; which produces a

considerable

considerable quantity of cheese and butter. The cheese is both used at home, and sold to the lower parts of the country. The butter is all needed, to mix amongst the tarr, for salving the sheep.

Some cattle are bred in the district; but not in any considerable quantity. They are of various breeds: Some of them good, but, in general, little attention is paid to this article of farm stock.

Wages to farm servants are much the same in the northern parts of the district as in the low country, viz. 15 bolls of oats, barley and pease, with a cow's grass, &c. In other parts, yearly servants have 12 bolls of the different grains, with pasture for 36 sheep. It is the general opinion, that fewer inhabitants are in Lammermuir at present than in former times. But it is difficult to assign a sufficient cause for any decrease of population.

The roads leading thro' this district have, till of late, been very little attended to. At present, those from Dantskin to Kil-pallet burn, and from Garvald to Dunse, are in tolerable repair. Few of the rest have ever got a shilling laid out upon them, the whole of the statute money having been applied upon roads situated in the lower parts of the county.

The above is a short description of the present state of Lammermuir, and of the mode of farm management therein practised. We shall now, in a few words, point out the obstacles to its improvement, and how they may be removed.

As in most of the farms there is some good dry arable land, the first obstacle to improvements arises from a want of inclosures. Some Farmers have of late raised excellent crops both of clover and turnips; but to their great mortification, have often had them destroyed by their flocks, from the want of fences. The common muir pasture are so dead and withered, during the winter months, that the sheep are quite restless, to get any sort of green food; and if they once taste turnips, their avidity increases after every gratification.

The arable land in each farm, which is at present worn out with long tillage, might be greatly improved by being laid in grass a few years, or by raising turnips and clover, for the support of the farm stock. The greatest improvement that can be suggested, is to inclose such grounds, otherwise the tenant must hold, whatever improvement he carries on upon them, by such a precarious tenure, that he will scarcely be at the trouble of stepping out of the old beaten path. It is therefore the interest of the respective proprietors, to have all such fields, as are above described, completely inclosed

closed, by which their value will be greatly increased, as the farmers would thereby be enabled to raise turnips and hay, for supporting the flocks during the inclement winter months. This should be done by allowing the tenant a complete reimbursement, at the expiration of his lease, for all inclosures that are *then* in a fencible situation; or should be done by the Proprietors at their own expence, upon the tenant becoming bound, to pay a reasonable interest, during the currency of his lease, for money so expended. It is well known that several proprietors insist, in such a case, for seven and a-half per cent. which is highly unreasonable; for if the tenant is bound to leave them in a sufficient state to his successor, the repairs can never revert upon the proprietor; and at the end of the lease, an increase of rent is the necessary consequence, if this mode of improvement has been judiciously executed.

Lime has been found to produce material advantages in many parts of this district. Every encouragement ought therefore to be held out, so as it may be extensively used. There cannot be a greater encouragement offered than giving suitable attention to the making of good roads; for, at this time, the expence of carriage is sufficient to deter the most part of tenants from so beneficial a practice. It is hardly to be expected that Lammermuir roads can even be so good as those in other parts of the county; but the inhabitants, at the least, have an equitable claim, that the money produced by the statute work, within the bounds of the district, should be expended there, and not carried to roads where they have little or no interest. N.

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[*Wishing to wind up the tyth controversy, we take the earliest opportunity of inserting the following Reply to the* Answers of Mr T. S. *in our last number; and entertaining an opinion that a regulation of tythes, however necessary, is not to be expected in the present state of public affairs, it appears expedient to wave the question till a fitter opportunity occurs. It remains only to add, that, as this burden is acknowledged, on all hands, to be a great obstacle to agricultural improvement, every true friend to his country, must ardently long for the return of peace, when this and other important subjects may be calmly and seriously investigated.*]

TO

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

## *Reply to Mr T. S. on Tythes* *.

SIR,

ALLOW me to say that Mr T. S. has either fallen into a radical error concerning tythes, or is determined not to understand the principles upon which I combated that tax. In my first letter, p. 61, I shewed, in a variety of instances, the pernicious consequences of an exaction in kind; and demonstrated that tythe, though at first sight an equal burden, was, in reality, the most unequal tax in the kingdom. I then proposed a plan for commuting this tax; which, in my humble opinion, silenced the objections offered by him and others against a commutation. This plan, the result of much deliberation, tended to benefit the tythe-holder, because it admitted him to a share of every advantage which might arise from the growing prosperity of the country. It permitted proprietors to reap the full value of their respective properties, which cannot be got under existing circumstances. It secured the tenantry in the quiet and peaceable possession of the lands occupied by them, and kept the whole manure upon the premises, instead of allowing the soil to be legally robbed of a tenth of its food. In a word, it removed all the trouble and discontent which for ages has accompanied an exaction in kind, and enabled every agriculturist to cultivate his land in the most approved way, without subjecting industry to a tax levied in direct proportion to the abilities of the occupier.

In the answer to my observations, none of these things seem to have been considered by Mr T. S. He is so enveloped with ideas of private interest, as altogether to neglect the prosperity of the public, though it was upon this broad footing that my arguments rested. The principles, upon which I supported a commutation, were, that agriculture would, by such a measure, be greatly benefited; and, of course, the interest of every class concerned therein, whether tythe-holders, proprietors, or farmers, would be much advanced. Whether I have not been so fortunate as to make myself understood, or whether the subject is embraced on too large a scale for your correspondent's comprehension, cannot at this time be ascertained; but certain it is, that few passages of the answers apply to the real question. He says a good deal about right and wrong; about the extent of tythes, and the tenure upon which they are held; and, in fact, argues the question, as if I had proposed

* No 16. p. 440.

proposed to deprive the tythe-holders of their property, without giving full value in lieu of it. I certainly, however, admitted their right, and proposed a full and complete remuneration. I valued tythes at a just price, and most willingly allowed the owners to participate of all the after profits.

Whether tythes are to be considered as a real estate, or as a tax or rent-charge upon the estate, are questions, in my opinion, of little moment; seeing that every proprietor in England may imitate the late Lord Lonsdale, and lay waste his property, if he chuses. The fact is, that tythe is a tax upon produce, and only exigible when produce is raised. It is something similar to the old income tax, which was levied upon the income of the payer, and did not affect his property in the most distant manner. Precisely in the like way, does the tythe-tax operate. If you raise ten bolls, or rather ten quarters of grain; or breed ten calves, and so forth, you must give one of each, or pay the value of it, to the person who is possessed of the right, whether he be a layman or a clergyman. That a payment of this nature deserves to be considered in the same light as if the receiver actually possessed a given share of the estate from which the grain and calves, &c. were produced, can hardly be seriously maintained. The proprietor of the land may sell every inch of it, if he is not tied up by legal restraints. Nay, he can sell the very spot upon which the grain, calves, &c. were produced; so consequently has no partner in the estate. No doubt he is liable, by the laws of the land, to a pay the tenth of what produce he may raise, to the tythe-holder; but this is merely a charge upon the premises, imposed by law, in order to defray the expence of certain public purposes. But as we fully agree in the extent of the right, it were folly to waste words upon the nature of it. The difference betwixt us lies concerning the power of the legislature to regulate the exercise of the right; that is, whether with justice the tax can be changed from a tenth of the produce, to an annual payment in money, according to the rents charged upon the respective properties. I formerly endeavoured to prove that such a commutation would promote the interest of all parties; and your correspondent, without denying my positions, or attempting to invalidate the arguments used in support of them, seems to maintain that the consent of the holders is necessary to make the measure just; and that the evil is not so great as to call for legislative interference.

I observe in the remarks which you have thought proper to make on Mr T. S.'s answers, that you very *apropos* notice the thirlage-bill, which undoubtedly is in every point analogous

nalogous to the measure I have recommended. I may add, that interferences of this kind are made every day with private property, many of them assuredly known to your correspondent. Shall I remind him of the defence-act passed in last Session of Parliament; which laid proprietors under the necessity of relinquishing their property, whether they would or not, in order that barracks might be erected thereupon. Such a measure, though a strong one, did not excite surprize, because the records of Parliament are full of similar instances of legislative interference. Indeed, every road and canal bill contains clauses of the like import; and there are few of our great towns but have, at one time or other, solicited public assistance, to compel proprietors to make a surrender of houses and land for their accommodation and convenience. Mr T. S. may tell me, as he has done already, in the above paper, that all these things 'proceed upon the undeniable principle, that subjects must surrender a *part* of their property for the security of the remainder.' I rejoice at the concession, because it supports my argument in the amplest manner. I contend, that tythes are an obstacle to the improvement of the country, and the same is admitted by my antagonist; therefore, upon his own principles, the tythe-system ought to be amended, in order that the country may be fully improved. I observe he marks the word "part" in Italicks, as if the amendment could not justly go farther; but this is manifestly a distinction, without a difference, and was not acted upon in the case of the South Bridge of Edinburgh; where numberless proprietors had to relinquish their whole heritable property, in order that the good town might be ornamented and improved. I have already given my opinion in favours of a full compensation being secured to tythe-holders; and this being done, must maintain that a regulation of tythes would be no greater stretch of power than has been a hundred thousand times exercised.

In the next place, I may remark, that Mr T. S. admits that tythes are unfavourable to improvement; therefore I have a right to infer, that unless he is of opinion that an obstacle to improvement should be suffered to remain, he must of course acknowledge the propriety of correcting the evil, so far as its existence can be ascertained. In making this admission, perhaps he was not aware of the consequences; for, to have resisted successfully, he ought to have contended, as has been done by many others, that tythes were not an obstacle to improvements, therefore not calling for legislative interference. Perhaps the evil of tythes, like the rich man's riches, or the poor man's poverty, has been exaggerated; but in the way which he argues the question,

question, this does not merit consideration. Tythes he allows to be an evil to a certain extent, therefore a suitable remedy ought immediately to be applied.

That tythes in the abstract are a great evil to the possessors of land, will not be disputed by any person who has reflected seriously upon the subject. When exacted in kind, they subject the occupier to numberless inconveniences, besides robbing the land every tenth year of the manure which should enrich and support it. When exacted in money, according to an annual valuation of the crops, it is obvious that the burden is exactly in proportion to the improvements made by the occupier; therefore, when the slovenly farmer pays a small sum, his industrious neighbour is subjected to a heavy tax, merely because he has cultivated his land in a superior way. But these things need not at this time be insisted upon, having been fully discussed in my last. With regard to the extent of the evil, or which is almost the same thing, the extent of tythes, I apprehend that your correspondent is wrong, when he estimates them at four millions and a half. I may, however, sustain his estimate, for it strengthens my cause. It would be a curious circumstance, were relief denied, because the evil is greater than was apprehended.

I mentioned the happy effects of our Scottish system, and he answers, that tythes were not commuted in North Britain, nor, strictly speaking (says he), are they commuted at this day. Pray what did the gentleman mean when he gave you this passage? and did he reflect for a moment upon the proceedings which have taken place in every quarter of the kingdom, in consequence of the act 1633? Have not tythes been valued in every part of Scotland, and can he produce an instance where they are drawn in kind by the titular, or by any other, unless it be a few vicarage articles of trifling extent? That a payment in grain, in lieu of tythe, is made in some places, I readily admit; but this does not alter and vary annually like a tythe in kind, and is precisely of the same nature, though not always of the same value, as a money payment. The act of Parliament sanctions a valuation, and permits purchases to be made at nine years amount of the annual value, in every case, except upon the crown lands: in other words, those belonging to the bishops at the Revolution; therefore, if the law is not acted upon, it is the fault of the proprietors, who enjoy the fullest means of procuring redress.

The account given of the proceedings at the Reformation, and in the reign of Charles I. concerning tythes, is neither fair nor candid. At the Reformation, in 1560, when the

hierarchy was overturned, tythes, like forfeited lands, reverted to the crown, as trustee for the public, and were afterwards gifted to the titulars in the same way as those belonging to the monasteries and abbacies in England, were conferred by Henry VIII. upon the lay impropriators. From 1560 to 1628, tythe was levied by the titulars precisely as is done in England at this day; but the severity of their exactions (it was greater than under the clerical administrators) occasioning general discontent, and the crown threatening to bring forward an act of resumption, a compromize was judged necessary on all hands. This produced the celebrated submission to Charles I. which it is believed was signed by the whole body of titulars; and under that circumstance I must maintain, that the proceedings were in every respect fair and regular, especially as they were afterwards sanctioned by an act of Parliament. Indeed, the decreet-arbitral pronounced by king Charles, appears to be the only measure of his reign, that afforded satisfaction to his subjects. Perhaps, after all, Mr T. S. means to go deeper into the question, and to deny the right of the titulars; though he so eagerly supports the lay impropriators of our sister kingdom. If something of this nature is not in his view, pray what does he mean by alleging that tythes were wrested from the church, or tacitly given up by her, in the phrenzy of fanaticism? The Church of Scotland at no period possessed the tythes, therefore could not give them up; nor had she a right to them, unless it can be made out that the reformed clergy were the legal heirs of their Roman Catholic predecessors. When the Scottish legislature abolished popery, and established a new system of church government, they certainly had it in their power, nay, they had the right to fix upon the terms and conditions under which the new government was to be administered. Whether they made a wise and prudent use of the revenues of the ancient establishment, shall not at this time be investigated; though it may be remarked, that a division of the spoils among the principal actors, was perhaps the means of securing the Reformation in both countries. If the Reformation in England had gone the length it did in Scotland, the crown would, in like manner, have seized upon the whole tythes; but a part of the old fabric being preserved, the forfeiture was of less extent. Had it gone the like length, I am clear that the English clergy, as a whole body, might have been benefited. The church, to be sure, would have been deprived of her rich dignitaries, but the condition of the lower orders, those who dispense the ordinances of religion, and bear the heat and burden of the day, would have been improved.

improved. I put it to your correspondent, whether the majority of English clergymen are not worse provided for than their brethren in Scotland, notwithstanding of the immense sums levied upon the public, for supporting the national church.

The circumstances condescended upon by your correspondent, as a proof that tythes are not an evil of such magnitude as represented, will not avail him much, though he characterizes them as *facts*. That lay-tythes may be purchased in certain cases, I readily admit; but that the greatest part of them can ever be purchased under the present system, I strenuously deny. In fact, lay-tythes are bought and sold every day, or how could such a portion of English territory have got quit of the burden; and I call upon Mr T. S. to say, whether it is consistent with his knowledge, that proprietors have refused to make purchases when sales were offered? If any person is satisfied that tythes are an evil, he will not conclude, because those in the hands of laymen may in certain cases be legally bought up, that there is no necessity for seeking legislative interference. He will consider that almost the whole of the property belonging to ancient families is entailed; therefore unsaleable, without a decree of the legislature. He will reflect upon the pride and obstinacy of others, whose hands are not legally tied up. Judging in this manner, he will pay little regard to the inferences of my antagonist.

The other circumstance condescended upon, is of no weight in discussing the abstract question; though, if correct, it might be produced as a proof of the supineness of the people, who patiently submitted to such a grievous oppression. The effect of tythe is only discovered as improvement advances; and the great body of any people may, by usage, be reconciled to exactions of a still more intolerable nature, as the history of mankind sufficiently proves. Hence no just inference can be drawn in favour of tythes, from the patience displayed by those upon whom they operate; besides, being sanctioned by the legislature, and strictly enforced by the administrators of the law, those interested have made the best of their situation, without enquiring whether an exaction in kind retards the prosperity of the country or not.

Notwithstanding I am clear that the tythe system is injurious to agriculture, I am not altogether satisfied that it is detrimental to the general body of farmers; seeing that land is on that account set to them upon much lower terms, as very properly stated by a correspondent, in your fourth number. It is the restraint upon their operations, and the une-

quality of the burden which occasions discontent among cultivators, not expectation of profit from an exemption. Proprietors may be viewed as more deeply concerned in the removal of tythes; but having bought their lands with the burden, their inactivity to get quit of it, may in some measure be thereby accounted for.

In my last I quoted several attempts which had been made in England, to arrange matters for an application to Parliament, which it is well known were repressed by the circumstances of the times. If Mr T. S. would for a moment consider that tythes are in the hands of the very people who must make the regulation required (in one assembly this is certainly the case), and reflect upon the motives which have been assigned, as influencing those who support it, he will not feel surprize that legal relief has not been more generally sought after. A learned law-lord, no farther back than last session, was heard to declare, that if tythes were meddled with, he would not ensure his hearers the possession of their estates for a single year! Wonderful indeed, that a conversion of grain into money, and changing a tax in kind into a share of the rent paid out of the premises, should produce such a dreadful alarm. Is any man's estate worse secured in Scotland than in England; and yet, in the former, tythes are not collected? or would the adoption of such a plan, as I suggested for our sister kingdom, injure the property of a single individual? Very good judges have viewed it in a different light; indeed the prosperity of all concerned would thereby have been advanced, with the exception of those who thrive upon the numerous law pleas engendered by the system.

But to return from this digression; If a patient endurance of any grievance for a length of time, is to be received as a proof that such a grievance either does not exist, or that it is not of much magnitude, then every first attempt to remove a public evil may be combated in like manner. When Luther argued for a reform of religion, would his adversaries have been successful (we mean in argument), had they answered him, that Europe had been satisfied with the Roman Catholic religion for fifteen hundred years, therefore that a reform was unnecessary. Upon no stronger footing, however, does this boasted fact of your correspondent rest; and with the same success may every first attempt to correct abuse be combated. Because tythes have hitherto been patiently submitted to in England (we recall the expression, for the perusal of any single volume of law-reports will show that it is erroneous), shall Mr T. S. contend that the system is not a

bad

bad one; or rather, that it is not so bad as described by its adversaries. In this way slavery might be supported at Algiers, and heading and hacking at Morocco. That *whatever is, is right*, may be a just philosophical principle, but it rarely holds good when applied to political matters. Indeed, the reasoning adopted by Mr T. S. puts us in mind of the motto on some of the medals circulated by those who stiled themselves '*Friends of the People*,' 'That a nation to be 'free, had only to will it.' A sentiment theoretically true, but practically false, and refuted by the experience of all ages. Mankind are generally guided by a few, and their happiness depends entirely upon the genius and disposition of those who accidentally get possession of power. The great mass of the people, in every country, have nothing to do with the direction of affairs, and their voice is seldom listened to even when lifted up. If that respectable body, the Highland Society, had not taken up the business of thirlage, Scottish agriculturists would still have been saddled with that burden. It had been sustained for ages, and few public complaints were made, because individuals neither knew when nor where they were to seek for redress; yet a law has now passed, which will enable every proprietor to get free of the servitude. Has this law injured the proprietor of the *dominant tenement?* Certainly not; because he gets the full value of the multures from the proprietor of the *servient tenement*. Precisely in this way would the proposal for commuting tythes operate. Here let me ask your correspondent, whether any law existed in Scotland before the thirlage-act passed, to prevent proprietors from selling their multures? If he answers me, as I presume he will do, in the negative, then he must confess that his reasoning on this head, is good for nothing, or else must maintain that the Highland Society undertook a work of supererogation, when they applied for the thirlage act.

Some other parts of Mr T. S.'s letter might have been animadverted upon, were I not sensible that I have already trespassed upon your limits. Suffer me, however, to remark, on the absurdity of calling farmers to come forward with offers of additional rent, in the event of tythes being purchased by proprietors. If an offer of exemption was made by the tythe-holder, then I can discern the propriety of tenants coming forward; but under existing circumstances, an offer for a farm in the lunar regions would be equally praise-worthy.

That mankind are always guided by a sense of real interest, is a proposition which few will support; yet your correspondent thinks, that because the evil of tythes has been

long overlooked, it is not of magnitude. I beg he would not lay too much stress upon this specious conclusion, lest, like the rod of Egypt, it should pierce his own side. Mankind are prone to error, and apt to neglect their best interest; or how comes it about, that nearly one thousand men are regularly paid by the landed interest of Scotland, and a still greater number by the public at large, merely to teach them their duty, in the performance of which their truest and best interest lies? Nay, the establishment of the very tax under consideration, proves that mankind are not so wise as your correspondent imagines; for, if they were able to comprehend their duty, consequently to pursue their real interest, why were teachers thought necessary to instruct them in the one, and show them the best road to the other.

I conclude by remarking, that though tythes are, in many instances, leniently drawn, particularly clerical ones (the causes of which need not at this time be mentioned), the general question is not thereby affected. It is the system itself which I combat, not the mode in which it is executed by individuals. In a word, I confess myself unable to ascertain the object which your correspondent has in view. He candidly acknowledges, that '*tythes are unfavourable to improvements, often vexatious to the occupier of land, and attended with odium, loss, and trouble to the exactor;*' and yet the apparent scope of his communication is to prove, that tythes are not an evil of magnitude. This reminds me of the Billingsgate lady's speech, recorded by the Tatler, or some other periodical essayist. "*I own I am a whore; I own I am a thief; but as for any other thing, say black is the white of my eye.*"

I am yours, &c.

A Friend to Improvements.

*P. S.* I omitted to notice the side blow aimed at the dissenters; and cannot help here remarking, that it is unjustly bestowed. If tythes are a part of rent (which is unquestionably true, under the present system), what does it signify to the tenant, whether the receiver is a churchman or not. In the event of a proprietor receiving rent by a deputy, a tenant might, with the same propriety, refuse payment of the stipulated sum, because the deputy's religious principles were not in unison with those entertained by himself.

self. The argument, if it has any weight, applies only to clerical tythes, and does not bear, in the most distant degree, upon the point which has chiefly occupied my attention in this discussion.

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FOR THE FARMERS MAGAZINE.

## *Hints regarding Potatoes.*

### I. Receipt for boiling Potatoes.

1. THE potatoes should be sorted, and those of the same size dressed together; for it is absurd to suppose, that potatoes of different sizes can be made properly ready at one and the same time.
2. Cold water, and not hot, should be put with them into the pot, so as merely to cover them, as they contain a great quantity of water themselves.
3. When they are boiled, the water should be taken from them, and the pot should be put again upon the fire, for some time, to evaporate all the moisture.
4. Either salt water should be used, or a good deal of salt used with fresh water. Cold water also should occasionally be thrown in, to damp the violence of the heat, and to prevent the potatoes from being over-boiled.
5. They should be served up with the skins on; and when properly prepared in this manner, may supply in a great measure the use of bread.
6. If skinned, they should be thoroughly mashed, and put on a plate into an oven; and when brought up, kept hot before the fire, in which state, with melted butter, they make most delicate eating.

### II. On the best sort of Potatoes.

The best sort is not the round, but the flat and broad kind; for they boil equally, and to the very heart, which is not always the case with the large round ones. There is a red sort, a kind of small yam, originally from Ireland, that is very productive; and, if kept till spring, it grows mealy or farinacious; but if eat earlier, it is very apt to disagree with the stomach, and to occasion looseness, particularly in children. S.

TO THE CONDUCTOR OF THE FARMERS MAGAZINE.

*Scheme for sowing Wheat Lands, when the ground is wet.*

SIR,

OCCUPYING a considerable tillage-farm, much of which is well calculated for producing wheat, I have often been disappointed in my expectations, when wet weather ensued in the end of autumn, after executing the several preparatory steps in the most proper and efficient manner. You know very well that land completely summer fallowed, when once soaked with rain at the above period, is rarely in a condition for resisting the pressure of the horses till the spring season arrives; and that wheat sowing, under these circumstances, must either be given up, or the ground and crop subjected to damage and injury, from the poaching of the horses during the process of harrowing. Upon soils adapted for wheat, no other grain can be substituted that will afford a crop, equal, in value, to that of the golden grain. Hence it becomes an important object to secure the proper season; or, if it is missed, to devise schemes for accomplishing seed work in the best possible manner.

Having sometime ago had occasion to peruse Mr Donaldson's treatise on British husbandry, I noticed that he recommends a timber axle, long enough to extend across the ridges, whether 12 or 18 feet wide, and to which as many harrows might be hung as sufficient to cover the ridge. By furnishing wheels to the axle, and drawing it by horses, who stepped in the open furrow, he adds, that the work may be safely and sufficiently executed, or words to that import. I last year tried the plan recommended, but found, in the first attempt, that it did not answer; for, if one horse went a single foot before the other, the wheels ran into the ground, and occasioned an ugly rut; besides, there was no getting it turned at the end of the ridge, with any degree of ease. Reflecting upon these things, and strongly desirous of rendering the implement more perfect, I caused a joint to be made in each end of the axle, within the wheels, and placed a pair of slender shafts before them, in which the horses are yoked; and I have the pleasure to add, that the alteration succeeded to my wish. I last year (1802), sowed ground in a state of perfect mire, which was harrowed in the way above described, and the crop proved not inferior to any in my neighbourhood. Some of my friends have

have also sown wheat in like way. In short, the machine promises to be an useful article in wet seasons, though no doubt our earnest desire is to have few occasions for yoking it. I am yours, &c.

W.

NOTE BY THE CONDUCTOR.

THE Conductor, about twelve years ago, influenced by the like motives as guided his respectable correspondent, got a machine of the same nature made; but after giving it a fair trial, was obliged to lay it aside for reasons precisely similar with those stated to have occurred in the first attempt made by Mr W. He is extremely happy, however, to hear that such alterations have been made as to render the machine practically useful. The sowing of wheat is now become one of the most important operations upon a tillage farm. Many farmers, to gain a season, have resorted to an early seed time, but even this is attended with many disadvantages. At any rate, from the great quantity now sown upon bean stubbles, the most active person may be thrown behind, and lose an opportunity often not to be regained, till spring time arrives.

N.

TO THE CONDUCTOR OF THE FARMERS MAGAZINE.

*On the Culture of Turnips, &c.*

SIR,

IN my letter of 13th January (vide p. 147.), I stupidly enquired, 'How can your friend make his turnips '(where they are but 11 inches distance in the rows) as 'large as $8\frac{1}{2}$ inches in diameter?' and was led to this by having got into my head, that a distance of $5\frac{1}{2}$ inches only remained for each plant; whereas it is evident, upon reflection, that they might even grow to the size of 11 inches, without doing more than filling up the vacant space. You will oblige me, by admitting this acknowledgment into your Magazine, as early as possible; for I will never persist in an error, after I have discovered it.

In your 2d vol. p. 376, mention is made of a graduated spring-steel yard being fastened to the head of a plough, for ascertaining the force necessary to work it. I shall be glad to

to learn where a steel yard of this kind is to be got, as it would be an useful instrument to every farmer concerned in the management of tillage land. I am also informed that a machine for weighing live stock is very common in Scotland, a description or drawing of which would prove acceptable to many of your English readers.

Permit me to mention an agricultural implement that is getting fast into practice in this quarter, though invented several years ago. I mean a drill for sowing grain of every description, and with any quantity you please. It may be used by the most ignorant farmer, without danger of mistake; being simple in its construction, and not easily put out of repair. The inventor is Mr C. Perkins, cabinet-maker, Stockton upon Tees, who sells them at the low price of L. 6 : 16 : 6. An additional box may be had to this drill-machine, for sowing along with the seed any kind of manure, such as ashes, rape dust, pigeon dung, soot, &c. and he also makes a set of hoes, to fix on occasionally, to clean the different sorts of growing grain. I am not personally acquainted with Mr Perkins, but must do him the justice to say that, for real use, durability, and cheapness, his drill is superior to any I have yet seen. I have used it with success on strong stoney ground, for several years, and my expectations have not at any time been disappointed.

I have the pleasure to inform you, that the drill-husbandry for grain, is becoming very general in the north of England, particularly for wheat, beans, and pease. You will likely say, why don't we include turnips as an article of drill-husbandry, especially as they are taken as a first crop, upon which the success of the after rotation must necessarily much depend? If you were to put this question, I could only answer, that we are very well satisfied with the crops of tha root which are got according to our present system; and I explained this at such length in my former communication, that it is now unnecessary to return to the subject.

I am yours, &c.

A YORKSHIRE FARMER.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

*A Short Account of Dr William Halyburton, with some extracts from his Georgical Letters.*

SIR,

I beg leave to hand you some extracts from the Georgics of our countryman, Dr Halyburton, a work probably unknown to the

the greateſt part of your readers. It is not with much of the Doctor's life that I am acquainted; but the following particulars are communicated on the authority of ſome friends who were in habits of intimacy with him from his youth. I only lament my inability to preſent a fuller account of this gentleman, as he certainly poſſeſſed a conſiderable degree of learning and genius, and enjoyed ſuperior opportunities of acquiring a knowledge of ſociety both in Britain and America, than many of his cotemporaries.

Dr WILLIAM HALYBURTON was born at Hollandſide, in the pariſh of Preſtonhaugh, and county of Eaſt Lothian, about the year 1720, his father being tenant of that farm, and of which his nephew is tenant at this day. He was connected with a number of the moſt reſpectable tenants in that opulent county, which circumſtance probably gave his mind a bias to agricultural reſearch, and influenced him to write a volume of Georgical Letters, at an advanced period of life. Be theſe things as they may, he received a ſuitable education for the church, and for a time acted as tutor to the family of Sir James Dalrymple Bart. of Hales, through whoſe intereſt he was appointed chaplain to the firſt batalion of the Royal Scotch Regiment of foot, then commanded by Lieutenant General St Clair. When rebellion raged through the land in 1745, Dr Halyburton (then in Sir James Dalrymple's family) connected himſelf with a volunteer company at Muſſelburgh, and on that occaſion preached a ſermon deſervedly admired, and afterwards printed. As a pulpit orator, the Doctor poſſeſſed numerous qualifications. His figure was comely; his language bold and animated; and his ſtyle pure and correct. His ſubſequent appointment in the Royal Scotch, however, removed him to diſtant lands; and prevented a ſettlement at home, which undoubtedly he would ſoon have obtained.

It is believed he accompanied General St Clair in the unſucceſsful expedition againſt Port le Orient in 1746, and it is certain that he embarked with the Royal Scotch at Cork in 1757, for America, with whom he ſerved during the whole of that war. When the regiment landed at Halifax, Nova Scotia, the chief command was held by the late Earl of Loudon, better known in this country by the name of Lord Loudon Campbell, of whom the Doctor was in uſe to recapitulate many characteriſtical anecdotes. During the time he ſerved with the Royal Scotch, the Doctor was the intimate companion and favourite of the celebrated Lieut. Col. Forſter; indeed moſt of the officers were particularly attached to him. Perhaps both before and after, as brave or even braver officers may have held commiſſions in that ancient and reſpectable corps; but at no time did it contain officers poſſeſſed of greater wit, and more poliſhed manners, than at the period

period in queſtion. Afterwards, when promotions and removals brought about almoſt a total change of field officers and ſubalterns, Dr Halyburton quitted the regiment, and returned to Britain. He was then nominated chaplain to an eighty gun ſhip of war; but in this ſituation he did not long continue.

The future life of Dr Halyburton cannot be well elucidated; but it is believed he chiefly reſided in London, which is aſſuredly the beſt receptacle for a man of letters. That his pen was not idle during his reſidence in the metropolis may be ſafely affirmed, though few of his productions can be expreſsly condeſcended upon. It is well aſcertained, that a ſmall tract, called the *Memoirs of Magopico*, was wrote by him at an early ſtage, when he was a candidate for holy orders. The Georgical Letters were printed in 1782, and contain a number of ſenſible and intelligent obſervations, mixed with others of a different deſcription.

When advanced in life, Dr Halyburton returned to his native country, and reſided with his brother (then alive), and other friends in Eaſt Lothian. In a word, he finiſhed his life at the age of eighty years, in the very houſe, perhaps in the very room, where he drew his firſt breath; circumſtances that rarely happen in the lot of few people, particularly thoſe of learning and genius.

N.

*Extracts from the Georgical Letters of Doctor Halyburton.*

HERODOTUS, as I remember, relates, that in his time the wheat grown on the plains of Babylon yielded 300, 350, and 400 fold; that the natives reckoned the firſt a bad, the ſecond an indifferent, and the third a good increaſe; and that the leaves of the wheat were three and four inches broad. As the hiſtorian mentions nothing ſingular in the culture, one concludes that the corn had been ſown in the common way of random broad caſt.

We read in Holy Writ of an hundredfold after random ſowing expreſſed in the plaineſt terms. Though in parable, there is no appearance of figure. It means a not very common, yet a known product.

In the province of New Jerſey 1½ peck is the quantity commonly ſown at random on an acre, and 15 buſhels, or forty fold, the moderate increaſe. Yet ſuch wheat has tillered but little, and is very ſhort eared. What wonder? A negro

negro fellow with a couple of palfreys at a half trot, for plowing, had discoloured the land at the rate of 3 and 3¼ acres a-day.

From the two first instances one is ready to suspect, that the elementary powers of Nature are debilitated by time.

The plains adjoining to the probable site of Great Babylon, now possessed by the stupid Mussulman, have not that amazing fertility they had in the days of Herodot.

The land of Jewry, less extensive and equally mountainous, is now more sterile than Wales.

The instance from the western world, one would think, exhibits Dame Nature, man unopposing, prone to luxuriate; still in her prime.

The fertility of regions is often the effect of human industry. Campania, once the garden and granary of Italy, is now a stinking poisonous waste, from the depopulation made by barbarism succeeded by slavish superstition. Grass uncropped, on level land, will in time give a surface of morass.

A continuation of good husbandry, with judicious manurings, deepens the soil from year to year. Short leases and frequent scourging crops, while they deteriorate, diminish. Limeshells laid on shallow grass ground with a clay bottom will in few years render it arable.

Besides moral and political, there are natural and preternatural causes affecting fertility. Situation with regard to mountains, woods, bogs, bays, seas, fish-banks and the ocean: the sun, the sky, the climate, the exhalations, the effluvia, the fountains, the floods-----all these and more, singly, or in multifold combination, give or with-hold bread from man.

Newfoundland, Cape Breton, and the south-eastern skirt of the peninsula of Nova Scotia, being within the range of the bank fogs can never be made frugiferous.

Ireland has her weeping sky. Berkley, graceful and profound, was but an ideal patriot when he wrote his Querist, so far as it regards corn husbandry. Drain the bog of Allen and all other bogs, green Erin will never ageee with the plow, but as it is subservient to flax and pasturage. What avails the flattering prospect of June and July, if it is to fall a sacrifice to the Atlantic rains of August and September? In granting bounties on grain exported, the parliament of that kingdom made a well-intentioned effort. Still they were tugging against the stream.

Her numerous harbours, by far the best in Europe, seem as if intended by Providence to invite Ireland to plow another element. Time was, when she grew the best oak in the world.

The

The roof of Westminster-hall, coeval with the walls, is now fresh as from the hands of the carpenter.

The vegetation of a country depends on the latitude, the elevation or depression, the cloudiness or sunshine, the breeziness or stagnation of air. The top of Penmunmaur is colder than John-a-Grott's House. The mathematicians sent by the late kings of France and Spain, to measure a degree of latitude under the equator, experienced more cold than those sent on the same errand to Lapland. They took their station 2000 toises (almost 2¼ miles) above the level of the Pacific. At Lima, in the 13th degree of south latitude, there is neither cloud, rain nor thunder. A garua or thick mist prevails for some weeks before and after the winter solstice. Yet lucern grows in abundance. At Tumbez, nearer the line, not a speck is ever seen in the heavens.

The western Cordillera of the Andes gives all climates. At bottom grow cochineal, and the hottest plants; higher grow the tropical; higher are wine and oil; over these are the regions of corn, of grass, of wild goats and sempiternal snow.

The thermometry of the whole terraqueous is variable. Armies of old marched over the Tiber on ice. The Norwegians for ages had a settlement on Greenland. For ages they have been cut off from it by an increasing icy continent.

When Anson sailed round the world, he found the weather colder in the southern, than in the same latitudes in the northern hemisphere. A Dutchman about that time sailed under the north-pole star, in fine weather. The sun being annually above seven days longer to the north than to the south of the line, seemed to warrant the greater warmth, a permanent phænomenon. It is otherwise. Falkland's isle is now warmer than Newfoundland, and the north pole inaccessible for storm and extreme cold.

Oats will grow farther north, or, which is the same, on more elevated grounds than wheat or two-rowed barley. The best oats I have seen grew in latitude 55 and 46 minutes, 10 or 12 miles inland, and about 700 yards above high water.

In the lower part of Virginia wheat is shrivelled like small pepper-corns. In more southern latitudes, equally low, on the eastern continent it is plump and good. A clearer ether gives an intenser sun. At Halifax in latitude 44. 45. near 100 yards above high water, my Fahrenheit, when hung in the shade 12 feet from the ground, from 10th to 22d August, 1763, both days inclusive, ranged from 81 to 83½. Yet 27th December, 1762, evening frost, calm, clear stars, the thermometer at that place sunk to 5 below 0.

Preternatural causes affecting fertility are earthquakes, eruptions

tions, disruptions, waterspouts, hurricanes, comets, streamers, meteors, stellar, planetary and lunar influences. Out of human ken, all these seem lawless. Viewed through mortal optics, they appear fortuitous, absurd and discordant. Yet superior intelligences calculate a deluge or tornado as we do an eclipse of the moon; and in cities sinking to the great abyss discover design, order and harmony.

Of earthquakes, that of 1st November, 1755, whereof devoted Lisbon was the focus, was the most extensive. All Europe felt it. In a fortnight it shook Boston in New-England, whence it proceeded in a south-westerly direction to South Carolina.

Emanations from so may substrata, some nutrative, some tartareous, emerging into day, could not fail in part to enrich, in part to debase the fluids. Followed crops over Europe, in some territories good, in more below mediocrity. The year 1757 is memorable as to the British isles. In the eastern and most corn-bearing division of Great Britain, by some broiling days in July, the proverb, 'that a crop of corn never suffered 'by heat,' was reversed. The harvest was cloudy and wet, and ended with stagnant air and thick dews. In the west the crop was good. Over Ireland the best for above 80 years.

There are certain small postulata proper for a man to carry about with him when he means accuracy in husbandry. For example, in plowing an acre with a furrow nine inches broad, the plow goes just 11 miles; with a furrow of eight inches, 12 miles three furlongs; and with a furrow of six inches, $16\frac{1}{2}$ miles.

To the draught cattle it is much the same with which of these furows the day's work is done; for if with a broad furrow their toil is increased, their velocity is diminished; and if with a narrow furrow their velocity is increased, their toil is diminished.

To the plowman both cases are reversed. The broader the furrow, the less both toil and velocity; and the narrower the furrow, the greater are both. Velocity, you will observe, is toil in another shape. A sluggish plowman can ease himself somewhat by means of the ploughtail, but it is at the expence of the cattle.

It follows, that strength and dexterity are requisite for a march of $16\frac{1}{2}$ miles, with one foot higher than the other, and a considerable share of toil besides, be the plough irons ever so sharp and well set.

It were proper also to remember, that the Winchester bushel is a cylinder $18\frac{1}{2}$ inches diameter, and 8 inches deep, containing

of

of course 215,042 cubic inches, and consisting of eight gallons of 2688.

A Measure of capacity for corn is absurd, as is avoirdupois weight, Troy only being lawful. An English acre contains 43,560 square feet; a Scotch 55353,6; an Irish 70,560; a Paris arpent 32,400 royal feet; a Roman *jugerum* 269305,6 English feet. The English foot being supposed 1000, the Paris is 1068, the Roman 967, the Greek 100,724.

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TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR,

I HAVE long entertained an opinion that a greater benefit may be gained from cultivating oats than barley, provided the same preparation was bestowed; therefore have almost entirely thrown the last mentioned grain out of my rotation. Circumstances, however, often occasioned some fields not to be ready at the usual period of oat-seed time, such as unconsumed turnips, land previously in pease not being properly prepared, &c. and these were generally reserved for a barley-crop. The increased malt-tax, and the consequent depression of barley prices, induced me, last year, to try oats, so far back as the 18th of May, and I now trouble you with the result.

I had a small field under flax in 1802, and which, as usual with land after that crop, was far from being in good order. It got the first furrow in autumn, was cross ploughed about the first of April, and received three other ploughings, together with sufficient harrowing, rolling, and hand-picking. I then slightly dunged the field, seed-furrowed it immediately, and sowed early Dutch or Friesland oats. The seed, as already said, was sown on the 18th of May; but, from the dryness of the weather, did not appear above ground till the middle of June. Notwithstanding which delay, the crop was cut on the 11th of September, there having only intervened 116 days betwixt sowing and shearing.

The crop was a tolerable one, as last season went. I do not mean, however, to lay any stress upon this circumstance; but merely to shew that an early variety of oats may be successfully cultivated at a period more advanced than generally imagined. It may be alledged, that the trial was favoured by an early harvest; but it must also be attended to, that the intense drought prevented vegetation for a long while. Probably the benefit gained from the earliness of harvest, only compensated the waste of time originally sustained from the severity of the drought. Yours, &c.

A RURAL OECONOMIST.

## BRANCH II.

### RETROSPECTIVE VIEW OF BRITISH HUSBANDRY FOR 1803.

PERHAPS in the courſe of this year the ſcale of improvements has, in a great meaſure, remained ſtationary; and various reaſons might be aſſigned in ſupport of this opinion. The attention of the country, for the greateſt part of it, has been ſedulouſly devoted to matters of a different deſcription; and rarely does it happen, that internal improvement and external diſſenſion accompany each other. The ſcarcity of hands, in ſeveral diſtricts, alſo prevented different works from being executed, eſpecially in places circumjacent to thoſe where barracks and other public works were erecting. Indeed, the wages of maſons and carpenters roſe to ſuch a pitch, as abſolutely interdicted every private undertaking, unleſs thoſe concerned laid prudential motives altogether aſide, and reſolutely determined to go forward, in ſpite of every obſtruction. The ordinary and common operations of huſbandry, to be ſure, went on as uſual, though, in many inſtances, at an increaſed expence; but extraordinary undertakings, or ſuch as only caſually occur, were retarded conſiderably. In fact, the increaſed expence exceeded the abilities or means poſſeſſed by the great body of practical agriculturiſts, and occaſioned various undertakings, in contemplation, to be poſtponed till a fitter opportunity ſhall arrive. All theſe things combined, aſſuredly depreſſed that ſpirit of improvement, which, for ſeveral years paſt, has been rapidly ſpreading over Britain; and unleſs produce riſes in price, and maintains a nearer affinity to expenditure, muſt neceſſarily continue to operate in various degrees, according to the circumſtances in which different diſtricts are naturally or accidentally placed.

#### *Weather, and its Effects upon the Crop.*

The weather, during the greater part of 1803, was exceſſively dry, and, through the months of July and Auguſt, warmer and more ſerene than generally experienced in this iſland. The eaſt coaſt ſuffered in ſeveral reſpects, from ſuch an uncommon drought; but, in the oppoſite ſide of the country, no injury was ſuſtained, but rather much benefit was derived therefrom. As the eaſtern ſide of Britain is principally employed in tillage, apprehenſions were, at one time, entertained, that the grain-crops would be materially curtailed; but, though this actually happened in many places, it does not appear, from the numerous communications tranſmitted to us, that any thing like a general deficiency will be

experienced. In ſome diſtricts the wheat-crop partially ſuffered by mildew, and, in many others, oats were damaged by inſects or caterpillars, that preyed upon the grain before it reached maturity; but, with theſe exceptions, the crop may be ſafely viewed as approximating to an average one, eſpecially ſo far as reſpects conſumption; the different grains (oats excepted) being generally of fine quality, and containing a greater portion of nutritive ſubſtance than is commonly extracted.

To the weſtern ſide of Britain, where the climate is naturally humid and cold, the dry weather proved highly advantageous. The vegetative power of the ſoil, which, there, is feeble and languid, was animated and excited by the ſun's powerful rays; and, tho' ſoured and deadened by the humidity of ages, was cheared and reſtored to action, by getting quit of the ſuperfluous moiſture. An early and a dry harveſt, rare circumſtances on the weſtern coaſt, permitted crops of every kind to be harveſted and ſecured in a very ſuperior ſtile; and conferred a value upon the ſeveral grains which the backwardneſs of climate ſeldom ſuffers them to attain. As the graſs-huſbandry, however, is extenſively practiſed in all the diſtricts to which we allude, a heavy loſs has been latterly ſuſtained from the fall upon live ſtock, chiefly occaſioned by the almoſt total failure of after-maths and turnips in the eaſtern and midland counties. This declenſion of value, in live ſtock, will probably place both ſides of the iſland upon an equal footing at the end of this uncommon ſeaſon; but, if the ſummer prices had been ſupported, it would not be difficult to maintain, that the year 1803 would deſerve to be ranked as the beſt, in the memory of man, to agriculturiſts in theſe ſituations.

*On the fall in the price of Live Stock, and causes thereof.*

We have alluded to the recent depreſſion of live ſtock markets, and ſhall now ſay a few words upon the probable cauſes of that depreſſion. To us they appear to be of a temporary nature, not of a laſting tendency. The ſubject, to be ſure, is complicated and abſtruſe; and out of it queſtions may ariſe, eaſily admitting ſpeculation, though difficult to ſolve. We ſhall ſtate our reaſons for thinking that the fall cannot be laſting, and leave their juſtice and rectitude to be aſcertained at a future period.

The continued dryneſs of the ſummer months, ſtunted the paſture and meadow lands, and prevented the ſequence of demand, which uſually prevails at the beginning of autumn, in order that the ſtock of ſummer fed beaſts may be replaced. The ſame cauſe leſſened the quantity of fogs or after-maths, and rendered lean ſtock of every kind a heavy article of ſale, before a general fall occurred. It is obvious that, if turnips had ſucceeded,

ceeded, markets would ſoon have brightened up; but, as that article generally failed, leſs or more, in almoſt every diſtrict, immenſe numbers of cattle and ſheep, which otherwiſe would have gone to the ſtake and the fold, were at once thrown into the market, becauſe the owners were totally unprovided with food for ſupporting them. This increaſed ſupply, of courſe, glutted the markets in every quarter; nor could it poſſibly be otherwiſe, becauſe a very conſiderable ſhare thereof, in the common courſe of buſineſs, could not have appeared for three, four, five, and even ſix months afterward. The effect of this glut cannot poſſibly be overcome, till, like the ſtomach, when oppreſſed by a ſurfeit, the immediate cauſe is completely removed. That this muſt ſoon happen, appears to us a neceſſary conſequence; for, a continuance of ſuch extraordinary ſupplies, is phyſically impoſſible, under the circumſtances of the country. There is only the ſtock of the year to conſume; whereas, at the preſent time, we are anticipating our ſupplies ſeveral months before they naturally fall due, and therefore muſt feel a proportional ſcarcity before the return of the graſs ſeaſon. The fact is, that much of the beef and mutton now on ſale, would, in other ſeaſons, have remained in the hands of the feeders, as a ſtore for ſpring food, and would then have been ſold, increaſed, perhaps, twenty per cent in weight. This, of itſelf, will afterwards be felt ſeverely; it being much the ſame as taking one-fifth, or one-ſixth of theſe animals out of the market, that quantity of beef and mutton being actually loſt by the premature ſales that have been neceſſarily made. Theſe things muſt, and will be attended with the ſure and certain conſequence of making the after ſcarcity in direct proportion to the actual plenty at this moment, and furniſh ſerious cauſe for alarm, reſpecting the prices of butcher-meat, after the preſent forced and unnatural ſupplies are exhauſted. In fine, the failure of graſs and turnips neceſſarily occaſioned this forced ſupply; the want of keep, rendered it neceſſary to make ſales upon the beſt poſſible terms; the ſellers being more numerous than the purchaſers, enſured a command of the market to the latter, of courſe reduced the prices; and a great number of both cattle and ſheep, that, under different circumſtances, would have remained for ſupplying ſpring, being already killed, a ſcarcity, conſequently an increaſe of price, may aſſuredly be expected.

### *Corn Markets.*

There has been no want of grain for ſufficiently ſupplying the public markets in every quarter, and prices have been abundantly moderate, conſidering the market value of money, or, which is the ſame thing, its ability to diſcharge rent, pay labour-

ers, and liquidate taxes. Still, notwithstanding the regular supplies furnished, considerable importations have been made from foreign countries, which practically demonstrates, that the extent of home-raised produce is below that of the actual demand. The corn-laws continue to be but a dead letter, and their inefficiency is sufficiently shewn by daily experience. If the crops of grain raised in Britain exceeded the consumption, all the art of man could not raise prices, nor would any bounty, hitherto paid, equalize the rate of rents, labour, and public burdens, with those paid by the tenantry on the continent; of course, one of two things would necessarily happen, either the rate of rents would be materially reduced, or the farmer would be ruined. On the other hand, we have had a trial of free importation from foreign countries for five years, and yet prices have not been reduced so much as to admit of exportation. All these things effectually prove, that the system of corn-laws, established in Britain for more than a century past, have not governed the markets, but that the extent of the crops at home, when opposed to the increased consumption, has entirely regulated the rise or fall of the prices. In fact, the corn-laws, under the present state of Britain, injure, instead of benefiting, the practical agriculturist. They seclude him from foreign markets, without restraining foreigners, unless when prices are very low, from interfering in the home sale. We have often said, that a free and open trade, except in cases of dearth, would be preferable; and every day's experience corroborates the opinions we have given. By adopting such a liberal system, perhaps the rate of rents might for a short time be partially depressed, but matters would soon run into their just and proper channel. According to the principles upon which corn-laws are usually supported, heavy protecting duties ought to be imposed, in order that the increased value of rent, labour, and taxes in Britain might be counteracted; but, as the manufacturing interest, will always oppose, and that successfully, every attempt to lay on such equitable duties, the best alternative that can be chosen, is, to meet them on their own ground, and throw open the trade altogether. This, we are almost sure, would prove highly beneficial to every person concerned in the growth or sale of corn. It would put the trade upon a stable footing, whereas, at present, it is the most uncertain and fluctuating one that can be followed.

### *Rent of Land.*

It does not appear that land-rent has experienced any alteration during this year, unless so far as the legal imposition, by act of Parliament, is to be considered in that light. Whether rent

rent has aſcended to its utmoſt pitch, and, as things in this world ſeldom remain ſtationary, may now receive a fall of leſs or more extent, are queſtions of an intricate nature, out of our way to diſcuſs. One circumſtance, however, deſerves attention. From the increaſe of manufactures, the ſcale has, within theſe few years, mounted up to a height which the keeneſt of our ancient valuators never, for a moment, ſuppoſed it could attain; therefore, by analogy, it may be inferred, that if the trade of Britain continues to flouriſh, as it aſſuredly has done for many years paſt, a greater riſe may ſtill be expected. The inference is plauſible, though we are not diſpoſed to place much ſtreſs upon it, eſpecially when we reflect upon the great burdens latterly impoſed upon the tenantry, which tend much to enfeeble their exertions, conſequently to leſſen their ability for paying high rents. The trade of the agriculturiſt, like that of the manufacturer, is a delicate affair; and, when once checked, will not ſoon be revived; nor will capital, if once extracted, be eaſily reſtored. No doubt, agricultural capital will ſtand many blaſts, before it is diſſipated; but once wafted away from a country, it rarely, if ever, returns. The ſituation of other countries, once the granaries of the world, now converted into barren deſarts, illuſtrates ſufficiently the truth of our general doctrine. Britain, at this moment, is hardly better cultivated than ancient Italy once was, and yet we ſee the aſtoniſhing change which has taken place in the courſe of 17 or 18 centuries. Spain, till the end of the 16th century, was internally a rich and flouriſhing kingdom, or rather kingdoms; and now, alas! how miſerably is ſhe reduced. We do not mean to maintain, that this or that meaſure will produce this or that conſequence; but are merely ſupporting the truth of the general poſition, that agriculture, like trade, if once injured and driven backward, is not eaſily reſtored to its former ſtate.

Some conſolatory reflections occur, and we cannot avoid noticing them, becauſe they afford full proof that the adminiſtration of Britain is not inattentive to her national proſperity. The bill, paſſed in laſt ſeſſion of Parliament, for promoting improvement in the Highlands of Scotland, will, in our humble opinion, produce the moſt ſalutary and beneficial conſequences; and, at all events, proves that the welfare of the country is regarded, by thoſe in power, with a paternal care. We rejoice at obſerving ſuch attention ſhewn by the Legiſlature to thoſe remote diſtricts, and augur, from ſuch attention at the preſent diſturbed moment, that, when the *din* of arms has ceaſed, many other rural grievances will be inveſtigated and redreſſed. We need not be more explicit in this place; our opinions on the grievances which affect agriculture, being ſufficiently underſtood. In the

case of Highland improvements, no measure could be so well calculated as a leading one, or to further the intended end, as rendering the country accessible, by the erection of bridges, and the formation of roads. This is the first opening to improvements in every country, therefore most judiciously chosen, in the present case. To render the measure more promptly successful, the bill should have contained a clause, authorising the majority of landholders, in each county, to assess absentees and opposers, in their share of the local burden. The want of this clause is already felt, and will occasion the trouble and expence of procuring particular acts, all which might have been saved, by a general enactment.

*Income, or Property Tax, as affecting Farmers.*

The income, or property tax, is much complained of by many farmers, as proceeding upon a false assumption, with regard to their profits, and thereby subjecting them to a heavier burden than is laid upon other classes of the community. We have already stated similar sentiments, and must give, as our opinion, that the occupiers of land are entitled to redress, in this particular. No amendment upon the clauses of the bill can meet the objection; for it is the principle of taking one half of the rent as the criterion of income, which is complained of, seeing that it lays a foundation for the most oppressive exactions. Subjecting the occupier, in the first instance, to pay for the proprietor, is also considered (at least in Scotland) to be a grievance; in fact it will, to a certain extent, operate as forehand rent. Some proprietors seem to view this clause as disrespectful to them, and as if they were not able to pay their own taxes. Where abatements fall to be made to proprietors, several serious consequences may accrue, from dividing the payment of their tax, unless particular care is used in forming the returns.

*Malt Tax.*

Whether any committee will be appointed, in this session of Parliament, to investigate the relative values of English and Scottish barley, is not yet ascertained; but in one thing we are clear, that, in the event of such an investigation being entered upon, an act of gross injustice will be committed upon Scotland, if her ability to pay a full malt tax was to be determined by the relative qualities of this year's crop. To be just, the committee ought to extend their enquiries further back, and include the crops of the last and preceding years. The summer and autumn of 1803 was more favourable to the growth, or rather to the quality of Scottish barley,

ley, than those of any year in the remembrance of the oldest man living; therefore no correct conclusion can be formed for regulating a tax, which, in all probability, will not soon be repealed, from an enquiry limited to the crop in hand. Even under all the advantages of the present season, and at prices lower than those given for other grains, English barley is already importing, which affords good grounds to suppose that it maintains a part of its wonted superiority. A considerable quantity of Scotch barley, of crop 1802, still remains on hand, and must now be sold to the great loss of the grower.

### *Drilling of Grain.*

We have received various letters concerning the drilling of wheat, barley, and oats, on light soils; and are glad to learn, that this mode of culture is increasing in the southern counties of Scotland, and the northern ones of England. Such information is highly agreeable, because it shews that a superior attention to good farming, is coming fast into general practice; for drilling can never be practised to any useful purpose, where husbandry remains in an imperfect state. We do not entertain a doubt, but that drilling may be eminently beneficial in several districts; because it allows the ground to be regularly seeded, and at a proper depth, besides furnishing an opportunity of extirpating annual weeds, which are the bane of good husbandry on light soils; but still we see no cause to change the sentiments long held by us upon this subject, or to think, for a moment, that the numerous varieties of soil incumbent on wet or retentive bottoms, can ever be successfully cultivated in any other way than according to the ancient broad cast system. What is called the new husbandry, under the physical circumstances of the British isles, may be partially adopted, but can never become the established and general practice.

### *Turnips, Potatoes, and young Grasses.*

Both turnips and potatoes suffered this year. The former root failed less or more in every district, the latter only partially. We believe that in no one year, since turnips formed an article of field culture in Britain, has such a general failure been experienced. Even where a kind of crop has been got, we suspect that the nutritive substance thereof will be found inferior to the ordinary run of crops. Indeed with caterpillars swarming on every leaf, and with worms piercing the bulb or root in every direction, the juice and strength must necessarily

sarily have been sucked and consumed by these merciless intruders. Grass seeds have in many districts completely failed to the great loss of the occupier, both on account of the expence laid out in purchasing them, and the consequent derangement of his subsequent operations.

### *Thirlage Bill.*

In putting the act of Parliament for commuting thirlage into execution, we are informed that a curious and unprecedented decision was lately given in a northern county, which, according to the nature of our information, deserves to be noticed, in order that similar mistakes may not be committed in other counties, in the execution of this useful and salutary measure. We understand, that the jury first divided on the question, Whether the mill-owner should be indemnified for services performed by the party thirled, such as clearing the dam, bringing home millstones, &c.? and that the affirmative was carried only by a majority of one vote. Here the majority were certainly right; though, on what ground the minority opposed such indemnification, we are at a loss to discover. But, in the general verdict, if we are correctly informed, it would appear that the majority were completely in an error, when they gave *the full value* of all multures, services, and dues whatsoever, without making the least deduction, in consideration of the mill having been relieved of the actual labour of manufacturing the grain, for which these multures and dues were claimed; as, by doing so, they gave more than a just equivalent for the removal of the thirlage. This is the substance of the case, as communicated to us; and if the circumstances be correctly stated, furnishes a proof that even juries may go wrong. We shall, however, suspend our opinion, before the subject is investigated by our correspondent in the district alluded to, who is instructed to make particular enquiries.

Upon the whole, the state of husbandry in Britain, at the conclusion of the year 1803, cannot, in its great and leading features, be considered as materially altered by any circumstance or event which has occurred in the course of it. The trade in grain (the greatest in Britain) has not varied considerably; but, in that of live stock, which may perhaps be ranked as second to grain, a great depression has, within a few months, taken place. We have considered this depression as of a temporary nature, and briefly condescended upon the leading causes which produced it. Other branches of rural economies have also been cursorily noticed, and that

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in such a way, as we trust will convey some satisfaction to our readers. The imperfectness of this retrospective view, will, however, be candidly excused by liberal minded persons. Such will reflect upon the manifold difficulties attending a first attempt,—upon the importance of the subjects discussed,—upon the deficiency of materials for completing any thing like a correct picture of British husbandry,—and upon the extent of investigation requisite, before general conclusions can safely be drawn, from a number of detached local facts. With persons who reflect in this manner, we stand a small chance of being severely condemned; and to those of a different character, we would say, in the words of an ancient poet,

'——— Si quid novisti rectius istis,
'Candidus imperti: Si non his utere mecum.'

We shall now present several local sketches, obligingly furnished by correspondents, to whom our most grateful acknowledgments are due. By their aid we are enabled to lay before the public a more correct view of the husbandry of Britain, than could have been accomplished under the most active individual exertion. At the same time, we must regret, that the confined limits of the Supplement restrained us from presenting many articles of considerable importance, besides laying us under the necessity of abridging others; for which liberties we earnestly request that our friends will kindly excuse us.

COTLAND.

# SCOTLAND.

## *Caithness.*

The measures which were in contemplation, for promoting the prosperity of this remote district, have been considerably checked by the renewal of hostilities with France, which so unexpectedly took place at the commencement of this year. A state of war must in general be unfavourable to all sorts of improvement. The difficulty in obtaining capital to carry them on with spirit; the scarcity of hands, owing to the demands of the army and navy; and, in remote situations, the trouble attending the procuring seeds and other articles by sea, from distant parts of the country, and skilful labourers, where they are necessary for the introduction of any new system, are all hostile to active and great exertions. But if that was the case on former occasions, it is still more so at present, when we are threatened with all the horrors of conquest, by the most powerful state that has arisen in modern times; and when people in general seem more inclined to consider what are the best means of preserving what they have got, than of acquiring more. It were much to be regretted, however, if such a spirit were to become general. If that should be the case, this country would soon become unable to persevere in so arduous a contest. The best foundation of its strength is the cultivation and produce of its own soil, and if, in addition to the other calamities of war, we were to be under the necessity of depending on foreign nations for any large proportion of our subsistence at a time when commerce must necessarily be considerably diminished, our wealth would quickly disappear, and our distresses would accumulate to a height which might produce the most disastrous consequences. This is a subject which, it is to be hoped, will soon attract the attention of parliament, and that some system will be adopted for the purpose of furnishing the landed and the farming interests, with the means of carrying on the cultivation and improvement of the country, if possible with greater energy than ever, as the best mode of enabling us to prosecute the present war, with additional spirit and success.

In addition to the calamities of war, the last season also, was, on the whole, highly unfavourable to agricultural improvements. The spring and the beginning of summer were cold and ungenial; and though the months of July and August were dry, and consequently well calculated for the operation of burning, yet from the want of rain at that critical period of the season, the crop of this year has but little straw, and though the quality of the grain is wholesome, yet it is hardly equal in quantity to the average produce of Caithness. This is the more to be lamented, as the preceding crop turned out a worse one than any remembered in that county for some years.

*Inverness*

## *Inverness-shire.*

Mr Telford, engineer, spent a great part of the summer in taking the levels and lining of the great Caledonian Canal, from Fort William to Inverness, a distance of sixty miles, only twenty of which require cutting, the remainder being fresh water lochs, and an arm of the sea. There are a great number of men already employed in the quarrying of stones, and in the erecting of wooden barracks for the work people; but no general commencement of the undertaking will take place till the beginning of next spring, when it certainly will proceed with vigour. Mr Telford's estimate of the expence of roads and bridges proposed to be executed in the Highland districts, amounts to L.192,000, whereof it is intended to raise one half by an assessment upon the landed proprietors of the different counties in which such roads and bridges are respectively situated, and the other half government mean to supply. The gentlemen of this county (a few excepted) have already come forward with a voluntary offer of their share of the expence; and if those, who have not consented, refuse to meet the liberal views of government, an application will be made to parliament for power to assess them in their several proportions. The general advantages to the north of Scotland, and in particular to this county, that must result from the public works now in contemplation, ought to silence all opposition, and cause the proceedings, in every stage, to be forwarded with the greatest diligence and alacrity.

I formerly mentioned that the Caledonian canal will run through my farm, fully more than a mile, and on that account I must suffer considerably. Besides, it approaches within 250 yards of the front of my house, and will cut through several of my fields. I hardly think it possible that a suitable compensation can be awarded to me; for as tenant the injury done will be great in the first instance, though eventually the proprietor may be amply benefited.

## *Morayshire.*

Observing, with much satisfaction, in your valuable miscellany, an anxious desire to promote and animate that spirit of improvement in Agriculture and Rural Economy which is so rapidly spreading in all directions, and hoping that it will be agreeable to you to receive some account of the improvements in Morayshire lately undertaken, and of those soon intended, I send you the following sketch.

The most prominent is that by which our communication with the eastern and southern divisions of the kingdom will at *all times* be kept open—A Bridge over the Spey at Fochabers. Whether this object be viewed as the only link wanted to complete the vast chain of bridges from Cornwall to Inverness, and therefore truly a national one;—or, merely as a local accommodation to the agriculture, commerce, and comfort of this particular district, it is peculiarly interesting. The facility which this bridge will afford to the anxious traveller, to the mail, and even to the conveyance of troops and military stores

stores, which have often been interrupted for days by the magnitude and rapidity of the river in floods, will be gratefully felt; while essential benefits must result from it to this county in particular by the ready admission of that valuable, and much wanted article, lime, which abounds in the neighbouring county of Banff; from the immediate improvement of a large tract of level moor in the vicinity of the bridge on which there is an intention to establish a village; and especially from the inducement it holds out to the great dealers in cattle, to extend the tour of their purchases to this quarter, where there are always considerable quantities of stock, and which the hazardous and vexatious interruptions occasioned by fording the Spey, have hitherto tended to prevent.

It cannot fail to give pleasure to every liberal mind, to know that the chief obstacle to this great work has been happily overcome during this summer, by the erection of the three principal Piers which are now quite ready to receive the arches. The expence of this bridge (from 12 to 14000l.) is to be defrayed by Government aid, by public subscriptions, and by the liberality of that noble family on whose property it stands. When it is finished his Grace of Gordon will enjoy the gratifying reflection, that in his own time he has begun and completed a magnificent castle, an elegant church, and a most useful bridge.

Another important improvement, and intimately connected with the preceding, is to be found in the unanimous resolution of our last county meeting, to apply for an act of Parliament for making *turnpike* the great leading post road, and our principal cross roads. From the talents and persevering zeal of the committee, to whom this important matter is entrusted, every hope may be indulged of its effectual and speedy accomplishment. The advantages arising to agriculture, to trade, to safe and expeditious travelling from the introduction of *Turnpike road*, has been so practically demonstrated by their adoption in every part of the island, that no better argument, (tho' many must always arise out of local circumstances) nor indeed any other, is necessary to demonstrate their utility. This line of Turnpike, by continuing that now forming in the counties of Aberdeen and Banff, will extend the public accommodation in this way from the southern to nearly the northern extremity of the kingdom; and we cannot doubt but it will be taken up and acted on by the counties of Inverness and Ross, with all that energy and spirit which characterizes them in every public undertaking.

A substantial and very handsome bridge of two arches across the Lossie, at the east end of Elgin and near the Cathedral, which was founded in June last, is now completed. By it the communication with our sea-port, Lossiemouth, and with the eastern part of the county, formerly often interrupted by floods in the river, is secured at all times. While this essential accommodation is provided, the approach to the town in this direction, presents a most picturesque and richly varied landscape. The work has been defrayed by public subscriptions, and executed by Mr Burns.

A few spirited farmers have suggested the idea, and are ready to carry

carry it into execution, of making a Navigable Canal from Lossiemouth to within one mile of the market-cross of Elgin. The advantages proposed by this undertaking are—Draining the very extensive loch of Spyme, which contains a surface of 1500 acres at least, of the finest clay and loamy lands, that would produce the richest crops for many years without manure;—and also a material saving in the carriage of heavy articles, by supplying the county on the line of the Canal, and the town of Elgin, with lime, coals, and goods, and bringing from thence for export, at Lossiemouth, corn and such manufactures as the county produces. The natural advantages, which the proposed line possesses, are so peculiar and so great that, tho' the extreme distance be nearly six miles, it is calculated that the work would only cost 2000l. How much then is it to be wished that the heritors, thro' whose property it must pass, may hold forth that encouragement which the enterprise and spirit of the proposers deserve and require.

While I am endeavouring to give your readers some idea of those attempts at public improvement in this county, allow me to mention, with much respect, the conduct of Joseph King, of Newmiln, Esq. proprietor of some valuable lands in the neighbourhood of Elgin. This gentleman, on coming lately to the succession of a family estate, and finding part of it had been for time immemorial, subject to the inroads of the river Lossie, without any attempt being made to resist them, immediately built a water dyke in the most substantial and best manner, and of no less extent than 2300 ells, which, tho' done at a very considerable expence, has not only repaid the interest annually, but will return all the money expended, in a few years. He has also led the way in the embarkment and improvement of that large run-ridge field called the *Auchtenpart Lands*, the division of which was noticed in your 9th No. He has there thrown up 1000 ells of a very broad well finished water dyke that completely secures his proportion from the Lossie, and, by opening a new passage for the river and covering what was formerly its bed with 18 inches of rich loamy mould from an adjoining field, he has gained several acres, which will amply repay all his outlay in a short period. The pleasure, the security, and the advantages which he derives from spirited and judicious improvements it is hoped will stimulate others "to go and do likewise."

Before quitting the subject of this communication, and as in some degree connected with it, altho' I fear your patience is already exhausted, I cannot omit noticing, with much praise and with the sincerest wishes for its success, an attempt by the Morayshire Farmer Club to carry into effect a scheme of very considerable extent, and surely of the most benevolent nature.—*A Fund for the benefit of Widows, Orphans, and decayed members, on a liberal plan.* The draft of Rules, and Regulations, with calculations of the premiums and annuities, is now printed and in circulation. Although the idea originated with that society, it is by no means intended to be confined to them; respectable persons of every profession are readily admitted. The annuities are such as to make it an object worthy the attention

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of all ranks, and the calculations having been made by William Morgan, Esq. nephew of the late celebrated Dr Price, and perhaps at this moment, the most eminent calculator in Europe, gives as anction and an authority to this scheme which few others possess.

## *East Lothian.*

The weather, during the year 1803, was unfavourable in many respects to the husbandry of this county, but in others it proved equally propitious. From the last week of February to the same time of May, a single shower hardly fell, consequently, many fields of spring grain were stunted at the outset. In the first and second weeks of June, some genial rains, though not to a great extent, were received, but their effect was prevented by high gales of wind, which immediately followed. Little moisture dropped in July, and though a larger supply was furnished in the beginning of the subsequent month, yet from the ground being completely dried beforehand, less benefit was derived than otherwise might have been expected.

To persons intimately acquainted with the general nature of East Lothian soils, it will readily appear, that a drought of such uncommon length and severity, would operate upon the different districts of the county in very different ways; and that land, recently turned up, would, in every case, be much more injured than where the preparations had been made at an earlier period. A considerable part of the soil is of a light gravelly nature, or, what is nearly the same thing, is incumbent on a free and open bottom. Fields of this description, except where winter wheat had been sown, suffered materially; and upon dry sands the crops were nearly burnt up by the scorching rays of the July sun. The inland parts, where clay and loam of different varieties predominate, were only partially injured, though the several crops were, even in these situations, of much less bulk than those customarily produced.

Notwithsanding these adverse circumstances, there is good reason to believe, that, taking the county in the aggregate, it will be finally ascertained, that the quantity of grain produced in 1803 approximates to an average. The diversity of soil already noticed, renders weather, confessedly injurious to one district, beneficial to others; and when it is considered, that a large portion of the arable land is annually devoted to the growth of wheat, which is rarely injured by dry weather, perhaps it will be allowed, that the husbandmen of this county have not much cause to complain of a bad season. Individuals may have suffered considerably, but an equal benefit was gained by others situated under different circumstances. Those who deal largely in the grass and turnip husbandry undoubtedly sustained much loss; indeed over the whole coast side district the season proved less or more adverse to the occupiers.

A concise abstract of the advantages and disadvantages accompanying this uncommon season shall now be given. This of course must be restricted to general circumstances, seeing that to descend to minute particulars would be an impracticable attempt.

*Advantages*

*Advantages.*

Every furrow given to the ground from the commencement of spring seed to the present day, contributed to promote the objects for which ploughing is bestowed, and neither time nor labour were for one day lost or misapplied. The spring seeds were completely harrowed, with some trifling exceptions of barley after turnips, which were late of being removed. The fallows were sufficiently wrought, and generally received more furrows than usual. The turnip fields were better cleaned, and at less expence than generally occurs. Every branch of harvest work, from the cutting of the crop, to the safe ingathering thereof, was performed expeditiously, and at less cost than in seasons of a different description, though wages at the same time were high. The sowing of wheat was finished in good time, and to a greater extent than ever known; and field labour of every kind is far advanced.

*Disadvantages.*

Several barley fields could not be got sown in due time, which occasioned an imperfect braird, and an unequal crop. Hay proved universally very light, not an hundred stone per acre, in general cases; and where eaten down in spring, was hardly worth the cutting. The pastures continued miserably bare throughout the year. Many farmers were in want of water for the use of their live stock. Turnips worse than ever known, few fields being equal to half a crop, and in numerous instances they were ploughed down. Oats severely injured by caterpillars, and worse in quality by many per cent. than customary. Beans upon all light soils so bad as to yield little more than the seed sown. Young grasses planted badly, and in various fields failed entirely. Fodder generally scarce, and the stack yards in every quarter fully one fourth less in size than those of the preceding year.

Such it is believed is a tolerably correct picture of East Lothian husbandry for the year 1803, and perhaps it may be justly inferred, that any loss sustained was abundantly compensated by the superior opportunities enjoyed of executing every branch of rural work with regularity and perfectness. The soils of the county are so different, that no season, which answers in every respect for one description, will suit those of an opposite character. In few years however have the distinguishing lines been so clearly marked out as in the present, except perhaps in the fatal 1799, when the consequences were similar, though directly opposite. The coast side lands flourished in that year, whilst the internal parts of the county were drowned by moisture and starved by cold.

Though lime was used this year to a considerable extent, yet it is a dubious point whether the quantity will equal that of the preceding one. A general opinion was at one time entertained, that, as the arable land of the county had been limed at a former period, it could not be benefited by a repetition of the article; but this being now refuted

futed by positive facts, calcareous manure has been latterly applied very extensively. Indeed lime may safely be considered as the basis of East Lothian husbandry, rarely neglecting to operate, provided a full dose has been bestowed.

It is in contemplation to introduce a new road bill for this county into the present session of parliament, though the act passed in 1793, is not half expired. Various reasons are assigned for this premature step, but it is believed the true one is, to get the sanction of parliament for granting a considerable sum out of the funds of this county, in aid of the new bridge at Musselburgh in the conterminous county. It was originally intended to draw pontage there, but, in consequence of this grant, none will be levied. Travellers, to be sure, must admire the generosity of this county in subjecting itself to a heavy expence, in order that they may pass free, for the breadth and length of the measure is nothing more than that the good people of East Lothian are to pay pontage for all those who travel from the most distant parts of the island to the Scotch metropolis. It is also proposed to place a number of the bye roads under the turnpike system; a measure probably very necessary, though it must excite surprise that the most public cross road in the county, a road leading from one royal burgh to another, and presently in a bad state of repair, is not included.

A very complete thrashing machine of extensive powers, to be worked by water, has lately been erected upon the farm of Beil Grange, in the natural possession of Mr Hamilton Nisbet of Dirleton and Beil. We rejoice when gentlemen of affluent fortunes display attention to such matters, and can safely declare, that Mr N. carries on every branch of his numerous rural undertakings with vigour and judgment. Gentlemen of landed property ought either to farm well, or they ought not to farm at all.

## *Ayrshire.*

Taking crop 1803 throughout the whole county, I believe it may be termed a good one, that is, a crop equal to an average of years taken together. Since the beginning of June we have had one of the finest seasons ever remembered; dry weather in abundance, with such alternate rains as were perfectly sufficient for promoting and keeping up vegetation, by which means the grain was completely filled and ripened; and if sloth or carelessness did not intervene, it was next to impossible that it could be lost in harvesting. The extreme cold and unfavourable weather in April, and the whole of May, chilling the seed and young rising plants, rendered the crop thinner than usual; but the superior quality will probably supply that deficiency. In some grounds where the cold, frost, sleet, and hail did not entirely kill the plants, they retarded their growth till the more favourable weather in June succeeded. Hence an after-growth sprung up, which in many places rendered the harvesting very tedious and irregular. It was no uncommon thing to see several patches of green and half ripe corn stand for two or three weeks in the same field, after that the other

ther parts had been cut down and carried off. But with this little disadvantage, the counties of Ayr, Wigton, Kircudbright and Dumfries, it is believed, have more abundant crops, and of better quality, at least, of Oats, than most other parts of Britain, this season, can boast of; and the inhabitants have much reason 'to praise the Lord for his goodness' to them in this respect, which will help to compensate for a sore evil with which they have been visited.

A considerable part of the shire of Ayr, particularly Carrick, and a great proportion of the three counties last mentioned, being breeding and grasing districts, their success and general prosperity depend upon the value and ready sale of their cattle and sheep, which, for the most part, are driven to the English markets. The farmers stock was bought in at the end of the last season, and beginning of this, at extravagant high prices, and the *keep* in England having failed, manufactures being in a great measure at a stand, and the bankers finding it necessary to contract their credit, the value of live stock has greatly diminished. Sales are at a stand; numerous bankruptcies among the chief cattle dealers have ensued, and spread distress and desolation among many worthy and respectable families.

Experience ought to teach wisdom: and it is to be hoped, that this calamity will shew the folly of too much *speculation* in an article which depends upon the seasons, which no human sagacity can calculate; and upon trade and manufactures, which a breath of wind can overset.

## *Tweedale.*

Through the greater part of this county, the summer drought was felt severely, and the pastures were thereby much curtailed. About the latter end of July, and first of August, milch cows were so stinted in their pasture, that through the night, and at mid day, they ate last years straw in the house as frankly as they would have done at Christmas, with a storm of snow upon the ground. The uncommon hail showers, which fell on the 20th of July, did much damage, by breaking sky-lights, perforating the leaves of turnips, and tearing the leaves from, or cutting clear over the stems of the potatoes; fortunately in the cultivated part of the county, its tract was confined to a narrow range of about one mile in length, and four in breadth, across the water heads of Linton and Newland parishes.

The effect of the cold spring weather, was more discernable upon Potatoes than upon any other crop; and in the low ground this esculent was materially damaged by the early autumn frost. In the night betwixt the 20th and 21st of August, though the frost was not so severe as to cause perceptible hurt to the corn crops, yet the Potatoes suffered considerably. They are not thoroughly ripened this season, and probably may be rated at one third below an average crop. The Tweedale species, (as they are called here) which is a large round potatoe, with the eyes deeply indented, are by far the best crop; extending in some cases by computation of cart loads, to

fifty bolls, of about four cwt. each, per Scotch acre. It has been remarked as a singularity, this fall, that the ash leaves remained longest green, though generally the first in falling; the spring frosts had, in fact, nipped their buds when beginning to burst, so that they had to bud anew, and of course their leaves were younger and more vigorous; and though the harvest frost sufficed to wither the potatoe leaves, it had not been sufficiently hard to reach the ash leaf (susceptible as it has been remarked to be) from its elevated situation, and particularly from its being *in a more vigorous state of growth*; in which respect its susceptibility of frost biting, would seem to follow the analogy of that of Oats, as noticed in the fifteenth number, and elsewhere.

The turnip crop, the seed of which is here sown early, to compensate by allowance of longer time for growth, for backwardness of climate, had made very little progress till the rains in September arrived. Though there were few complaints of a deficiency of plants, yet they seemed to become stunted by the drought, few being found above the size of one's fist. The leaves had assumed a yellow appearance, interpreted by some into *ripeness*; whence it was concluded, that no further increase of bulb could be expected, the plant being supposed to have reached maturity. This *Munchausenian* analogic reasoning has, however, been eventually contradicted by the facts; for after rain was received, the fields gradually assumed a living, green appearance, and the bulbs have since increased at least to double, if not triple size. In short, the crop of this root will, every where in this county, turn out equal to an average one; and by furnishing our flocks with food longer than first expected, may contribute to lessen the present market glut, and provide supplies at a period when the failure in other districts may occasion a deficiency.

The prices of Scotch beer and barley, must depend on what becomes of the malt tax. Pray do you think that there is any probability of our arriving at that substitutionating dexterity in converting one species of grain so completely to the uses to which a different species is at present exclusively applied, as that the prices shall completely amalgamate? or shall the prices of each continue entirely to depend upon the quantity in which it is individually produced in each season?

*Mid Lothian.*

The only thing that occurs as novel in husbandry, is a practice lately adopted by a few farmers in this county, in the management of wheat land. The wheat is sown broadcast, and after giving the ground a single, or at most a double time of the harrows, it is immediately ridged up into drills, like turnips. Some do it by giving every drill a round of the plough, others at once by the plough, with a double mould board, and thus it remains all winter. The ostensible advantages are said to be, that it keeps the land completely dry, and leaves a rougher mould on the surface.

To speculate either upon the advantages or disadvantages of this practice would be premature, but it is pretty evident, that, upon certain soils, and in many seasons, it would be inadmissible, as it would poach and work the land into a kind of paste.

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It is generally faid, that money is the finews of war; the fame may be afferted, with equal propriety, when applied to the improvement and melioration of the foil. The quantity of lime purchafed from the kilns in this neighbourhood in one feafon, is generally in proportion to the quantity of money in the pockets of the farmers; and it can be foretold, with tolerable accuracy, whether the fale is to be fmart or dull by the nature of the crops and markets of the preceding year. The fales of the bygone feafon were a good deal below an average, owing to the prices of laft year being fo low, unlefs with farmers of confiderable capital.

An abominable practice was introduced here four years fince, by one of our lime proprietors, who, from downright greed, took the works into her own hand: Finding it a lofing concern, various modes were reforted to for making it a better one, and at laft it was refolved to fell only by weight, allowing 4½ cwt. to be a boll of barley meafure. But this is not the worft of it, having a coal work for the ufe of burning lime only, the patriotic refolution was formed, of giving no coals for the other lime works, unlefs the owners would come into the fame meafures.

Thus a combination was formed to fell only by weight: And this reprehenfible practice calls loudly for animadverfion and redrefs. The price is 5½d per cwt. but it is not the price, but the unhallowed practice of compelling people to give a premium for rendering the article lefs perfect, that is complained of; it being felf evident that the worfe the lime ftone is burnt, it will weigh the heavier; neither has the purchafer any proper check, as few farm fervants underftand or care much about the matter. Thus a great lofs is fuftained by the public, both in refpect of money and carriage, while the full benefit of the article is withheld from the land.

ACCOUNT OF WHEAT fold in Haddington Market, for ready Money, from the 3d of December, 1802, to 25th November, 1803, both days inclufive.

| Dates. 1802. | Bolls. | Proceeds. | Weekly Average. | Monthly Average. |
|---|---|---|---|---|
| Dec. 3. | 493 | L. 664 0 0 | L. 1 6 $11\frac{2}{12}$ | |
| 10. | 214 | 308 19 0 | 1 8 $11\frac{5}{12}$ | |
| 17. | 297 | 442 6 0 | 1 9 $9\frac{4}{12}$ | |
| 24. | 394 | 568 8 6 | 1 8 $10\frac{1}{12}$ | |
| 31. | 413 | 554 15 0 | 1 6 $10\frac{4}{12}$ | |
| | 1811 | L. 2538 8 6 | | L. 1 8 $0\frac{4}{12}$ |
| 1803. | | | | |
| Jan. 7. | 408 | L. 555 17 0 | L. 1 7 $2\frac{11}{12}$ | |
| 14. | 397 | 511 3 6 | 1 5 9 | |
| 21. | 475 | 617 8 0 | 1 5 $11\frac{11}{12}$ | |
| 28. | 398 | 506 1 1 | 1 5 $8\frac{7}{12}$ | |
| | 1678 | L. 2190 9 6 | | L. 1 6 $1\frac{3}{12}$ |

| Dates. 1803. | Bolls. | Proceeds. | Weekly Average. | Monthly Average. |
|---|---|---|---|---|
| Feb. 4. | 451 | L. 577 16 6 | L. 1 5 7 6/12 | |
| 11. | 396 | 488 6 9 | 1 4 7 11/12 | |
| 18. | 292 | 357 7 9 | 1 4 5 8/12 | |
| 25. | 249 | 311 13 0 | 1 5 0 4/12 | |
| | 1388 | L. 1735 4 0 | | L. 1 5 0 |
| Mar. 4. | 303 | L. 384 11 9 | L. 1 5 4 7/12 | |
| 11. | 346 | 444 5 0 | 1 5 8 1/12 | |
| 18. | 325 | 444 15 9 | 1 7 4 1/12 | |
| 25. | 209 | 295 10 0 | 1 8 3 3/12 | |
| | 1183 | L. 1569 2 6 | | L. 1 6 6 4/12 |
| April 1. | 202 | L. 278 15 6 | L. 1 7 7 2/12 | |
| 8. | 324 | 449 14 6 | 1 7 9 1/12 | |
| 15. | 279 | 390 18 0 | 1 8 0 3/12 | |
| 22. | 342 | 477 1 0 | 1 7 10 0/12 | |
| 29. | 346 | 477 12 3 | 1 7 7 3/12 | |
| | 1493 | L. 2074 1 3 | | L. 1 7 9 4/12 |
| May 6. | 285 | L. 396 3 6 | L. 1 7 9 7/12 | |
| 13. | 478 | 619 6 0 | 1 5 10 11/12 | |
| 20. | 351 | 510 10 6 | 1 9 1 | |
| 27. | 432 | 644 18 0 | 1 9 10 3/12 | |
| | 1546 | L. 2170 18 0 | | L. 1 8 1 |
| June 3. | 317 | L. 453 7 3 | L. 1 8 7 2/12 | |
| 10. | 332 | 472 10 0 | 1 8 5 6/12 | |
| 17. | 301 | 442 7 3 | 1 9 4 8/12 | |
| 24. | 457 | 692 14 0 | 1 10 3 0/12 | |
| | 1407 | L. 2260 18 6 | | L. 1 9 3 6/12 |
| July 1. | 439 | L. 673 18 0 | L. 1 10 8 3/12 | |
| 8. | 343 | 541 10 3 | 1 11 6 9/12 | |
| 15. | 397 | 608 10 0 | 1 10 7 11/12 | |
| 22. | 282 | 446 13 6 | 1 11 8 1/12 | |
| 29. | 375 | 579 2 6 | 1 10 10 11/12 | |
| | 1836 | L. 2850 4 3 | | L. 1 11 0 16/12 |

| Dates 1803. | Bolls. | Proceeds. | Weekly Average. | Monthly Average. |
|---|---|---|---|---|
| Aug. 5. | 322 | L. 463 9 0 | L. 1 8 $9\frac{1}{2}$ | |
| 12. | 366 | 539 18 6 | 1 9 6 | |
| 19. | 341 | 523 19 6 | 1 10 $8\frac{1}{2}$ | |
| 26. | 259 | 392 6 9 | 1 13 $3\frac{1}{2}$ | |
| | 1288 | L. 1919 13 9 | | L. 1 9 $9\frac{3}{4}$ |
| Sept. 2. | 337 | L. 490 18 3 | L. 1 9 $1\frac{1}{2}$ | |
| 9. | 482 | 679 2 0 | 1 8 $2\frac{1}{2}$ | |
| 16. | 544 | 750 7 0 | 1 7 7 | |
| 23. | 525 | 732 12 0 | 1 7 $10\frac{1}{2}$ | |
| 30. | 481 | 673 7 6 | 1 7 $11\frac{1}{2}$ | |
| | 2369 | L. 3326 6 9 | | L. 1 8 $0\frac{11}{12}$ |
| Oct. 7. | 507 | L. 687 4 6 | L. 1 7 $1\frac{1}{2}$ | |
| 14. | 502 | 698 4 0 | 1 7 $9\frac{1}{2}$ | |
| 21. | 455 | 617 2 9 | 1 7 $1\frac{1}{2}$ | |
| 28. | 621 | 819 17 3 | 1 6 $4\frac{1}{2}$ | |
| | 2085 | L. 2822 8 6 | | L. 1 7 $0\frac{11}{12}$ |
| Nov. 4. | 607 | L. 801 4 6 | L. 1 6 $4\frac{1}{2}$ | |
| 11. | 731 | 953 12 6 | 1 6 $1\frac{1}{2}$ | |
| 18. | 705 | 912 5 3 | 1 5 $11\frac{1}{2}$ | |
| 25. | 500 | 656 16 6 | 1 6 $6\frac{1}{2}$ | |
| | 2543 | L. 3333 1 9 | | L. 1 6 $2\frac{3}{12}$ |

| Dates. | Monthly Quantity. Bolls. | Monthly Produce. | Annual Average. |
|---|---|---|---|
| December, - | 1811 | L. 2538 8 6 | |
| January, - | 1678 | 2190 9 6 | |
| February, - | 1388 | 1735 4 0 | |
| March, - | 1183 | 1569 2 6 | |
| April, - | 1493 | 2074 1 3 | |
| May, - | 1546 | 2170 18 0 | |
| June, - | 1467 | 2060 18 6 | |
| July, - | 1836 | 2850 4 3 | |
| August - | 1288 | 1919 13 9 | |
| September, - | 2369 | 3326 6 9 | |
| October, - | 2085 | 2822 8 6 | |
| November, - | 2543 | 3333 1 9 | |
| | 20627 | L. 28590 17 3 | L. 1 7 $8\frac{1}{12}$ |

Attested by ARCH. TODRICK, Clerk.

N. B. The above relates only to the quantity of wheat actually presented in the market; but does not include what is there sold by sample, which is very considerable.

# ENGLAND.

## *Northumberland.*

The year 1803 has been rather singular in respect to weather, so far as agriculture is affected by it. The frost set in early in January, and continued until the beginning of March: this frost was for some purposes very convenient, as leading manure, &c. but being accompanied with little snow, it proved very prejudicial to the winter wheats. Ever-green trees and shrubs suffered materially from the effects of some of these frosts; many plantations of firs were turned brown on the sides exposed to the east and south, and had all the appearance of having suffered by fire. The frost ceased about the 13th of March, and was succeeded by remarkable fine, fresh, dry weather, and the spring seed was never put in under more favourable circumstances. The weather continued dry and cold through April, May, and beginning of June, and so far checked vegetation that the hay crops were very short, and the pastures seldom seen barer; some fine rains on the 9th, 10th, and 11th of June were of use to the grass lands, and particularly to the turnips sown about that period; but the intense drought which immediately succeeded, and continued through the summer, disappointed the rational hopes which the cultivator had entertained from the uncommon seed time he had been favoured with.

Upon dry soils, the drought prevented oats and barley from getting to half their usual length, and in many places they were arrested in the shot blade, and, on the whole, are below an average crop. Beans from the same cause were under a similar predicament. One effect of this long continued drought is, that the quality of all kinds of grain is good, particularly wheat, there being few defective grains, of course it gives well to the bushel, and the samples were never shewn in greater perfection.

The new variety of oats, called the potatoe oat, has been cultivated here with great avidity for 3 or 4 years; the crop of this year, I think, will rather check their cultivation on so extensive a scale, as it appears their produce, upon poor soils, is not so great as if those lands had been sown with Blainsley or Angus oats.

The cultivation of Ruta Baga, seems to be gaining ground in this district, as it appears there is much more land covered with them this year than was ever observed before; the great objection hitherto has been their inferior size to the common turnip, but when it is considered, that little more than half the quantity will be eaten by sheep, than of common turnip, the objection is removed. The property of bearing transplantation, and their superior hardiness in resisting frost, are also considerable recommendations, as well as their being capable of being put into heaps, covered with straw and earth, and kept in that state through the winter. I have kept some in this mode from

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the beginning of January to the middle of May, in as sound and perfect a state as could be wished.

I am happy to add, that the practice of drilling beans at 30 inches intervals, is making great progress in various districts, which I consider as a material improvement; and the drilling of corn crops, particularly wheat, at 10½, or 12 inches intervals is also becoming more extensively practised; the facility with which the intervals are horse and hand hoed, completely eradicate wild oats, runch, or wild mustard, and every other species of annual weeds in a few years: there is also a great advantage by having the lands so finely pulverized by these hoeings, for the clover and grass seeds, which are covered by a new horse hoe harrow, that harrows the intervals without touching the corn.

The markets, through the whole of this year, have fluctuated very little. Corn has been rather below par, particularly barley: for live stock there was a depression of prices in September, owing to the effects of the drought, but they soon after got up to their former prices.

This year will be remembered by many farmers for the losses sustained by the rot in sheep, though the disease was occasioned by the wet weather in the preceding autumn; considerable numbers of sheep of this description have been sold at half their value, and have tended to keep down the prices of good mutton for several weeks past.

## *Yorkshire.*

In a retrospect of the different periods of the present expiring year, we cannot help observing, that the state of the weather, though at some periods, and in some places very fine, and unusually encouraging to agricultural pursuits, yet, that on the whole, the result has been singularly, and extremely discouraging. A more forward and favourable spring, from the lambing season to the commencement of the summer months, was scarcely ever experienced; but the severe drought that ensued, and which continued here, almost without the slightest intermission of a shower, till the latter end of Autumn, produced such a defalcation of the ordinary resources for cattle, both in regard to pasture, fog, turnips, &c. that had not the crop of hay been tolerable in burden, and excellent in quality, the greatest distress must inevitably have been the consequence. Although the pleasing freshness of the grasses, with the much improved growth of the turnips, plainly progressive, till the late, and present hard frosts, forbid the farmer to despair, yet the general inconvenience has been great and trying. Much hay has already been consumed, and though, but in few instances, these disappointments point to improvement in modes of management, yet some of the more intelligent farmers are turning their attention to the culture of Lucerne for soiling, &c. than which, probably nothing better adapted to the purpose in all seasons will be discovered in our time.

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In these districts the general practice of husbandry on dry soils is directed towards the usual rotation of, 1. turnips, broadcast; 2. barley; 3. clover, or beans and pease; 4. wheat, or rye if too sandy and dry for wheat: and farms, not larger than one or two hundred acres, are mostly devoted to the plough for that rotation, with not more than ten or twenty acres at most, under meadow or pasture, besides seeds, &c. insomuch, that it is matter of perfect wonder and astonishment to men of reflection, how the pompous teams of 5 or 6 fat, heavy draught horses, half worked, and maintained at an expence, probably, of not less than 30l. per horse per annum, can possibly be supported on such small parcels of land, beside the heavy demands on the other produce for rent, wages, taxes, &c. &c. In short, nothing but downright necessity will ever induce the farmers to use that far more useful and profitable animal, the ox, for all the petty labours of such small farms.

On the clay soils, the practice is to work them for the rotation of, 1. fallow; 2. wheat, or barley; 3. beans, or clover; 4. wheat, or oats. But as the wheat crops are scarcely ever mown, about a ton of straw per acre being left in stubble, and as the soiling of horses is little practised, much time and labour are lost by running up and down for manure, to recruit the exhausted lands; all which might be spared, as is well shewn by the example of some few farmers, who carefully reap every atom of straw, and by soiling horses, and other cattle, convert the whole of their produce, into an abundant supply of the best manure, without any expence: Yet, strange to say, the benefits of this system, so obvious, and so implicitly connected with the keeping of horses for draught, cannot at present be comprehended by one tenth of the practitioners of this useful art.

In addition to the discouragements above alluded to, and which, as presented by nature herself, it behoves the rustic to meet with becoming resignation and patience, the political hemisphere has assumed an aspect which almost bids fair, in its consequences on the husbandman, to paralyse his laborious and honest endeavours to discharge his numerous and constantly encreasing obligations. The present reduced and reducing prices of almost every article of produce, unfortunately concurring with an increased rate of every species of out-payment for wages, taxes, &c. (particularly that most unreasonable, unseasonable, and destructive impost on malt, which, like a two edged sword, cuts the farmer, both in produce and consumption,) bear with such unexampled weight and rigour on every point of the cultivator's efforts and economy, that it may safely be concluded, on a fair retrospect of the whole period, 'that the agriculture of this realm has received a shock, and that its consequent movements are of the retrograde order.'

## *Norfolk.*

To the British Speculator, three principal objects are offered for his election,—Commerce, Manufactures, and Agriculture; and as every

every man is said to exhibit two characters, so these objects must be considered as standing in the same predicament. They have their bright and their gloomy aspects, their lights and their shades, consequently their advocates and their enemies. Thus commerce, to those who observe its bright side, only appears all amiable. It is the chain that connects the most distant parts of the habitable world, diffusing the luxuries, the elegancies, and the necessaries of life; enlarges our ideas, meliorates and improves our social virtues, smooths the asperities, and rubs off those unbecoming prejudices which adhere through every period, to beings who never travel out of the view of their own chimnies, or ever wander with the intelligent traveller, through those scenes which his pencil or his pen happily and forcibly describe. Commerce introduces (continues its advocate,) an infinite number of raw materials, to be wrought up by British ingenuity, for home consumption or exportation; thus affording employment for thousands. In short, it enriches individuals, strengthens the nerves and sinews of the state, and protects, with its wooden walls, the dearest rights and interests of society.

Another person, however, may observe the same object through a different medium, or view only the gloomy side. He may allow, indeed, that commerce introduces the luxuries and elegancies of life into a country, but contends that these luxuries and elegancies often prove the bane of its happiness, creates artificial wants unknown to our soberer forefathers, corrupts the heart and enervates the arm, by ministring to wants, at first indeed artificial (says he) but by habit rendered necessary. Corruption of principle succeeds, even the stern monitor, conscience grows every day more and more pliant, and the people degenerate into (what I believe the villanous Chief Consul, at this moment tauntingly calls us) a nation of tricking shopkeepers; and as to that universal philanthropy so much boasted of, it becomes so diluted, so insipid, so completely divested of all genuine spirit, that it is rendered perfectly useless for any good purpose, and is a bad exchange for that 'Amor Patriæ,' that love of country which ought to glow, with undiminished spirit, in every British bosom.

Manufactures have also their advocates and their enemies. The former tell you, that wherever they are introduced, they give employment to thousands and tens of thousands, who must otherwise starve or remain a dead weight upon the state; enrich individuals, increase the comforts, the commerce, and the importance of the country, which encourages and protects them. This eulogium is allowed by its adversary, to be in some measure just; but he bids you enquire how many lives are sacrificed in the attainment of their objects; and points to the squaled sickly countenances of young victims, crowded together in large manufactories, and maintains that the contagion is not confined to the vitals of existence, but that it corrupts and taps also the fountain of morality itself.

Leaving however, the *Pro's* and the *Con's* to settle these important disputes in which it appears, so much may be said on both sides; let

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us view the other object of Britiſh emulation, *Agriculture*, and we ſhall find (to continue the alluſion,) that, like the man of Roſs, it has but one character, never had, and never can make a ſingle enemy. Viewed in every aſpect, and through every medium, Agriculture appears fair and lovely, uniting all the excellencies of the other two, and rejecting all their defects; it is worthy of univerſal encouragement. The employments ſhe furniſhes are the hand-maids to health, competence, purity of heart, and cheerfulneſs of countenance. Her children are the children of nature, and though much of that ſimplicity, which once characteriſed the ſhepherd with the reed and his flock, has long ſince diſappeared, yet ſtill the huſbandman is, comparatively at leaſt, the child of innocence. Surely no man, who exerts even the ſlighteſt degree of obſervation, can behold the various operations of nature through the different ſeaſons of the year, in the field he cultivates, without finding himſelf improved by his reflections, nor without looking up 'through Natures work to Natures God.'—But I muſt apply the check rein in time to my hobby, or having got into this pleaſing level path of panegyrick, he will carry me far from the view and recollection of what was my principal intention when I firſt took up my pen, viz. to give you a ſlight ſketch of the preſent ſtate of Agriculture in the weſtern diſtrict of the county of Norfolk.

I am happy to obſerve, that not one atom of the ſpirit of agriculture ſeems yet to have evaporated, though it certainly ſtruggles at preſent under very heavy preſſures. The principal cauſes of complaint are, the late additional duties upon malt, and ſome of the old corn laws, which reſpects the exports and imports, and againſt the former of which a very ſtrong petition is preparing, to be preſented in the preſent ſeſſion of Parliament from this county. I will give you the routine of crops, and you will then judge whether there does not appear a happy union of ſpirit and judgment in the practice.

The land is generally ſuffered to lie two years in graſs; in the firſt year a ſmall portion is cut for hay, and the remainder of it the firſt, and the whole of it the 2d year, is fed principally with ſheep. After harveſt 10 or 12 loads per acre of good rotten dung, or ½ ton of oil cake (the latter at an expence of at leaſt 4l. per acre), is laid on, and as ſoon as the weather will permit, it is then broken up and ſown with wheat. The following year, the wheat ſtubble is ſown with turnips, which are fed off principally by ſheep; the ſtubble having been firſt again enriched either with dung or oil cake, avoiding a repetition of the ſame manure. Barley with graſs ſeeds ſucceeds, and the land again obtains a reſt of two years. By this mode of culture, heavy crops are produced; though the ſoil is by no means naturally fertile, yet it amply rewards the cultivators for labour and expence beſtowed.—To aver that agriculture had reached in this county its *acme* of perfection, would certainly be aſſerting too much; but ſince, in addition to this almoſt unlimited expenditure, the drill ſyſtem, which allows a liberal uſe of the horſe and hoe, is introduced, and pretty generally practiſed, approaching very near the neatneſs of garden culture, it will not be perhaps too much to affirm, that it is making rapid ſtrides in improvement; yet, as experienced chymiſts may ſtill farther inveſtigate

veſtigate the nature of ſoils and of manures, and diſcover new and beneficial comports; the ſkilful mechanic may improve old and invent new machines;—whenever ſuch improvements are diſcovered, I venture to affirm, that the huſbandman of this county will not be the laſt to encourage and to give them a fair and liberal trial.

Stock in this country, till within a few years, has been but a ſecondary object with the farmer, and he ſtill depends chiefly on Scotland for his ſupply of bullocks; but ſheep are now become an object of peculiar attention. Mr Coke, member for the county, claims great merit for the example he has ſet, and the encouragement he has given for the improvement of this animal. He is allowed to be an excellent judge, and, by a judicious ſelection of breeding ſtock, has certainly raiſed flocks of very ſuperior excellency of the kinds he has introduced, viz. South Down and the new Leiceſter; and at his annual ſheep-ſhearing, which is always attended by ſeveral of the Nobility and other amateurs, he generally produces 15 to 20 tups of each kind, to be let for the ſeaſon, and liberally fixes the higheſt price at 40 guineas. You will I am perſuaded allow that the epithet *liberal* is here very properly applied, when I aſſure you I have frequently ſeen more than 30 candidates for ſeveral of the beſt ſheep; and that amongſt them, not unfrequently, are to be found eminent breeders from the native country of theſe animals, a proof that they have not degenerated by migration. I am fully perſuaded had they been bought by auction inſtead of being diſpoſed of by lottery, they would frequently many of them have obtained double this price. The old Norfolk, a wild active ſheep, though ſtill allowed by the Epicures, to be the beſt mutton in the kingdom, is faſt diſappearing from the county, and indeed it certainly is not now (in its preſent ſtate of almoſt general enclofure) ſo well adapted to it, as 50 years ago, when a conſiderable part conſiſted of large open barren ſheep walks, where the animal had to traverſe a great extent of ground, in ſearch of a half belly full. Two favourite toaſts with the breeders and graziers of this animal, may perhaps afford you ſome imperfect idea of what they conſider its chief excellencies: '*Small in bone, and large in value.*' '*Symmetry well* '*covered.*'

There is one circumſtance reſpecting the agriculture of this county, which, to my comprehenſion, indicates a very high and improved ſtate of cultivation, and I own, knowing as I do the ſoil we have to work upon, it has often afforded me matter of very ſerious aſtoniſhment. The kingdom, I preſume you know, is divided into diſtricts for regulating the imports and exports of grain; and though Norfolk is a diſtrict by itſelf, and contains but very little of what can be termed a good natural wheat ſoil, yet it appears by theſe returns, that the quantity of wheat it exports exceeds that from any of the other diſtricts, though in ſeveral of theſe are united two or more counties, where the ſoil appears peculiarly adapted to the growth of that grain. Such is the fact, and a fact which I am perſuaded you will allow fully juſtifies me in re-aſſerting that the ſpirit of Agriculture in this country has improved, is improving, and is not likely to be diminiſhed.

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